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Report

of the Commission
on Graduate Studies
in the Humanities
and Social Sciences

 Social Sciences and Humanities
Research Council of Canada

Conseil de recherches en
sciences humaines du Canada

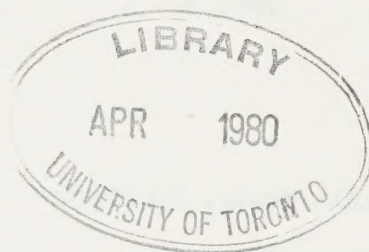
Report of the Commission on Graduate Studies
in the Humanities and Social Sciences

VOL. 2

Dennis Healy, President

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SECTION THREE

Graduate Studies in Quebec Universities

PREAMBLE

In discussing graduate training and research it is not enough to focus on the internal structures and policies of universities. There are external forces and external constraints which also must be considered. We have already noted that Canadian universities are dependent on governments for funds for training and research and that almost of necessity there will be some tension between academic and social pressures operating on these universities. In recent years, however, the external pressures have become more overt and more powerful. Universities have been recognized as instruments of social policy, as agents of governments, and measures have been introduced so that they would play this role more effectively. One result has been to transform the relationship between universities and provincial governments.

Until relatively recently Canadian universities, even provincial universities, were not really in the public domain. J.A. Corry has pointed out that as late as 1960 they were still "essentially private enterprises in the form of their organization and in their ways of thinking and acting."¹ University autonomy was a high principle extolled by professors and politicians - a long-standing tradition that universities must be exempt from political interference if they were to fulfil their academic function. Any political encroachment was seen as a threat to academic freedom.

This hallowed convention must now be reinterpreted because Canadian universities are considered to be in the public domain. A major change in the government of Canadian universities since 1960 has been the direct intervention of provincial governments in the planning and provision of university services. At first, as one study of higher education put it, "the harsh reality of growing government control was obscured by the legal fiction of institutionalized autonomy."² Today it is patently, even painfully, obvious that universities are not autonomous. They are expected to serve the public interest, and provincial governments claim the ultimate right to define what the public interest is. Academics may advise and their advice may be heeded, but provincial governments decide.

In retrospect it seems clear that the relative freedom of Canadian universities from government intervention was almost fortuitous. The potential for

political influence was there even before 1960, because all universities had become dependent to some extent on government subsidies. Until the 1960s, however, universities attracted little public attention or interest and were left largely to govern themselves. The change came when parents and students saw them as institutions which could significantly affect career prospects, and when social planners saw them as institutions which could provide the personnel and skills required for the complex activities of modern industrial society. Eventually taxpayers began to see them as expensive institutions, successfully competing with other social services for public funds. In a remarkably short time provincial governments put aside long-standing inhibitions and intervened directly in the planning and provision of university services.

The transformation since 1960 has been extraordinary. Today a distinctive feature of higher education in Canada is the emergence of provincial systems, with individual universities fitting into this provincial pattern. The initiative came from the provincial governments, where an increasing commitment to economic planning led to a special concern for the development of vocational and professional skills. Provincial responsibility for education was extended beyond primary and secondary to postsecondary education, with university education as an integral part of provincial education at this level. Planning at the provincial level seemed even more mandatory with the growing diversity and expense of university programs, especially at the graduate level.

The transformation is remarkable because we are dealing with 10 provinces, and in each province the historical pattern and the provincial concerns are different and yet, in each case, the broad outlines are similar. Each provincial government increased its university grants, encouraged the expansion of established institutions and the founding of new ones. Each government also established guidelines for capital and operating grants which effectively channeled the expansion. The provincial authority was never imposed abruptly. Governments were often urged by academics to move more quickly, and in every case they sought the advice of academics. In every province over the last decade Royal Commissions or less formal bodies were appointed to investigate higher education and to make recommendations. In many cases a special advisory committee of academics has been appointed to assist government planning. These precautions, however, cannot obscure the fact that, in each province, the

universities are being integrated into a provincial system. In Saskatchewan, for example, the Royal Commission on University Organization and Structure reported in 1974 in favor of two independent, autonomous universities in the province, but it made the point that the overriding principle was the concept of university education in Saskatchewan as being a unified, province-wide undertaking. This assumption underlies almost every provincial study of higher education over the last decade.³

It is also notable that today every provincial department of education has a special division for university affairs or, in some provinces, a special ministry has been created to deal with education at the postsecondary level. In spite of the vast differences between provinces, the trend toward an integrated provincial system of universities, planned and directed by the government, is common to all.

The province of Quebec is a special case. Quebec universities are also being integrated into a provincial system, and provincial planning is probably more advanced than in any other province. To this extent, this chapter may be seen as a detailed case study of the emergence of provincial systems. But Quebec has special problems because some of its major universities and most of its graduate students are French-speaking. No report on graduate studies in Canada can ignore the unique character of graduate training and research in French.

Notes

1. J.A. Corry, Farewell the Ivory Tower: Universities in Transition (McGill-Queen's University Press, 1970), p. 102.
2. Ontario Commission on Post-Secondary Education, The Learning Society (Toronto: 1975), p. 107.
3. See, for example, British Columbia, Working Paper of Committee on University Governance, 1974; Alberta, Commission on Educational Planning, A Choice for the Future, 1972; Manitoba, Task Force on Post-Secondary Education, Report, 1973; Ontario, Commission on Post-Secondary Education, The Learning Society, 1973; New Brunswick, Higher Education Commission, Perspective: A Report to the Government on Operating and Capital Assistance to Universities and Colleges, 1974; Nova Scotia, Royal Commission on Education, Public Services and Municipal Relations, Report, 1974; Newfoundland, Royal Commission on Education and Youth, Report, 1968.

INTRODUCTION

Academics and officials of the Higher Education Branch of the Department of Education of Quebec will not be surprised to learn of our proposals to consolidate the provincial university systems. We are confident that these correspond to their wishes and aspirations. Among francophone colleagues and other Francophones interviewed, and in the many briefs received and studies conducted for other organizations, we have found throughout Quebec similar feelings and points of view which indicate that they consciously and proudly belong to a unique cultural community and society.

In dealing with the question of graduate studies in Quebec, we cannot ignore the long-standing, autonomous positions of the governments of this province nor the presence of a strong independence movement which the governing Parti Québécois has largely channeled.

Quebec university spokesmen have on many occasions displayed their acute dissatisfaction with certain practices of federal bodies designed for the country as a whole but which they do not consider conducive to the advancement of graduate studies and research in Quebec.

According to these spokesmen, research granting bodies, research councils, federal laboratories and departments have a single "pan-Canadian" conception of aid to graduate studies and have not taken into account the particular characteristics of Quebec.¹

Studies indicate that the aid granted to francophone universities by federal bodies is less on the whole than that given to anglophone universities of similar size, and that Quebec is proportionally below the Canadian average and most provincial averages. If McGill University is excluded, the difference is even more striking. These studies, however, do not distinguish between the natural and health sciences and the human sciences, or else they bear only on the former.

Until very recently, all studies conducted in Quebec had the same fault. However, Louis-Paul Dugal of the Council of Universities has analyzed the listings of the directory of grant-aided research compiled by the Research Information Centre under the auspices of the National Research Council and the University Information and Management Service (SIGU); his work has enabled him to

identify the main tendencies of each university in Quebec in all major fields of research. In addition to the publications of the Council of Universities, the still unpublished directory prepared by Jean-Paul Baillargeon and Gaston Barrette of the Higher Education Branch has also been useful. This directory corrects some of the points made in the Council of Universities publication, since more recent calculations have revealed differences with the initial compilations. We will therefore use it as the main source for our analyses.²

As part of our mandate, we had to carefully distinguish between the universities and major research sectors and, more specifically, to determine the percentage of research funds from federal and provincial governments for each of these major fields and universities. We also wanted to be able to distinguish between francophone and anglophone universities. Establishing these differentiations was a long, arduous task. We do not know the margins of error in our compilations; we do know they are low. One must not conclude from the data we have compiled that these trends apply over the medium term since our main compilations bear only on 1972-73 and 1973-74. However, these data do have an indicative value.

Our questions are the following: comparing francophone universities in Quebec with anglophone universities in Canada and Quebec, do the same inequalities exist in the human sciences as in the natural and health sciences? If not - and we will see that the human sciences are relatively more privileged - can we advance reasons for increased federal aid to francophone universities?

Given the limited aims of this section, our presentation will remain incomplete. We will not reopen the long-standing constitutional debate on education which, to a large extent, would now serve no real purpose. One need only consider the close links between teaching and research in graduate studies to conclude that basing federal prerogatives in research on the distinction between teaching and research is a poor argument.³ The victory of the Parti Québécois has placed the relations between the federal and Quebec governments in a new perspective. As will be shown in this section, over the last few years Quebec has developed a fairly well articulated science policy with very different criteria from those of federal agencies providing aid to university research. We will seek to determine the extent of research aid in the human sciences in Quebec universities and, if considered inadequate, suggest ways to

increase and redirect this aid.⁴

First, we will provide a summary listing of statistical data. Second, we will formulate several proposals on the particular situation of francophone universities in Quebec regarding graduate studies and research in the human sciences. Finally, we will present hypotheses and a conclusion.

Notes

1. See, for example, the minority report of Louis-Paul Dugal in the Report of the Commission of Inquiry on The Role of the Federal Government in Support of Research in Canadian Universities (Ottawa: Science Council of Canada and the Canada Council, 1969), pp. 393-397; and the declarations of Maurice Labbé and Larkin Kerwin, Vice-Rectors (Research), to the Senate Special Committee on Science Policy, in A Science Policy for Canada, vol I, pp. 204-205.
2. We would like to thank Michel Normandin and Louis-Paul Dugal of the Council of Universities and Jean-Paul Baillargeon and Gaston Barrette of the Higher Education Branch (Direction générale de l'enseignement supérieur or DIGES) for kindly making all their information available and for helping us find the answers to our many questions.
3. For a brief outline of the evolution of the Quebec Government's interest in advanced university studies, see the Report of the Task Force, University of Montreal, pp. 202-214
4. We shall see that the conditions vary greatly between the human sciences and the natural sciences or the health sciences, and among the various sciences. For example, commissioned research and specialized consulting are of much greater importance in economics than in other disciplines. We will carefully take into account the differences in the major fields of research. However, the information available does not show the importance of commissioned research and consulting by discipline.

I STATE OF GRADUATE STUDIES AND RESEARCH
IN THE HUMAN SCIENCES IN QUEBEC

The particular nature of graduate studies in the human sciences in Quebec may be perceived in two different ways: statistically, in relation to the existing differentials between Quebec and other parts of the country, or between francophone and anglophone universities in Quebec; and sociologically, by pointing out the unique features and specific requirements of francophone universities in Quebec in relation to the other universities in Canada and anglophone universities in Quebec.

In some respects, the development of graduate studies in the human sciences in the francophone universities of Quebec is ahead in relation to anglophone universities in Canada,¹ as a result in part of the high proportion of young Francophones of university age. This proportion will continue to increase for about five years, whereas it reached a ceiling among Anglophones in 1970. Though the student population was at a standstill between 1970 and 1973, it has been increasing over the last few years. The growth experienced by francophone universities also results from the effect, relatively more marked than elsewhere, of the higher level of schooling in the last 15 years, the sudden democratization of graduate studies and the more recent emergence of graduate programs particularly at the doctoral level, as compared with anglophone universities of comparable size. At this time, the application in the francophone universities of Quebec of measures actually designed for anglophone universities at a different stage of development would have a detrimental effect. Thus, it would be disastrous to restrict access to doctoral studies in the human sciences in francophone universities, as seems to be the tendency in anglophone universities, since there are very few francophone PhDs in this sector in Quebec, and the number of PhDs awarded each year is almost insignificant. Also, unlike anglophone universities where teachers were recruited for the most part during the '60s, francophone universities are now recruited for the most part during the campaigns in some of the human sciences, and particularly in the social sciences; this should continue to be the case for the next three to five years. (Even in Quebec, there are still proportionately fewer francophone than anglophone teachers.)

1. Undergraduate and Graduate Output

More than half the full-time teachers (55.9%) in Quebec universities have PhDs. The percentages vary according to the university. McGill heads the list (64.5%), followed by Montreal (64.4%, excluding its two affiliated schools whose percentage is much lower), Concordia (58.1%), Laval (53.6%), Sherbrooke (50.3%) and the University of Quebec with only 42.6% (Appendix IV, 1). With respect to citizenship, 73.8% of the teachers are Canadian. There are major variations, however, from one university to another. Only 62% of McGill teachers are Canadian citizens. The proportion of Canadian teachers is highest at Laval University (83.5%); then come the University of Quebec (80.2%), Sherbrooke (76%) and Montreal (73.7%) (Appendix IV, 2).²

In the section on graduate studies, we have provided data on the number of master's and doctoral students, graduates and degrees awarded each year.

As in every other region of Canada, the number of graduate students in Quebec universities rose constantly from 1940 to 1974-75, from 604 to 8,225. However, the proportion of students in Quebec universities in relation to Canadian universities as a whole decreased by more than eight percentage points (from 34.4 to 26.3%). Quebec was the only region showing a decline (Appendix III, 8). The proportions of Francophones in relation to Anglophones in Quebec universities for the years 1973-74, 1974-75 and 1975-76 generally favor the former in absolute numbers for the three levels of study and the three sectors - the humanities, social sciences and natural sciences. For the last two years, however, there were more Anglophones than Francophones in the humanities at the undergraduate level. Francophones account for approximately three-quarters of all students in the social sciences at the three levels, about two-thirds of students in the natural sciences at the undergraduate level and some 55 per cent of natural science students at the master's and doctoral levels (Appendix IV, 3, 4, 5 and 6). In the fall of 1975, approximately 17,000 students enrolled full-time at McGill, Montreal and Laval; these three universities had the greatest number of graduate students, together with the universities of Toronto, British Columbia and Alberta.

In 1973-74, there were 55,978 undergraduate students in Quebec universities. Of those whose place of origin was known, 71.3 per cent were from Quebec, 2.8 per cent from other regions of Canada and 10.3 per cent from other

countries; 15 per cent did not indicate their place of origin. Of 9,175 master's and doctoral students, 6,045 indicated their place of origin; of this number, 64.2 per cent were from Quebec, 4.5 per cent from other regions of Canada and 32.3 per cent from other countries (Appendix IV, 7). Nearly all the students in the francophone sector were from Quebec (98% at the undergraduate level and 93% at the graduate level). The percentage of students from outside Quebec was much larger in the anglophone sector (10% at the undergraduate level and 20% at the graduate level), most of them coming from the United States. There were no major differences between the two sectors with respect to age-group distribution (Table 1).³

Table 1

Mean Age of University Students in Quebec,
by Level of Study, Enrolment, Linguistic
Group and Birthplace, 1975 (fall)

Level of Study and Enrolment Status	<u>Birthplace</u>		<u>Outside of Quebec</u>	
	<u>Quebec</u>			
	<u>Linguistic Group</u>			
	<u>Francophones</u>	<u>Anglophones</u>	<u>Francophones</u>	<u>Anglophones</u>
Undergraduate				
Full-time	22.5	22.1	23.2	21.5
Part-time	30.4	29.7	28.4	25.3
Graduate				
Full-time	28.5	28	28.7	26.5
Part-time	30.8	31.3	32	30

Source: Based on data provided by Department of Education of Quebec,
Higher Education Branch.

The percentage of anglophone graduates at the three levels in relation to the English Quebec proportion is 4.3 per cent - more than double that of the Francophones. However, the proportion of francophone graduates in the humanities tends to be higher; the proportion of Francophones is equal in the social sciences but much lower in the natural sciences (Appendix III, 45).

The number and percentage of francophone PhDs in relation to the population is glaringly low. The respective rates of PhDs awarded each year only widen the gap. Thus, in 1972, Quebec francophone universities awarded almost seven times fewer PhDs in relation to the population than the United States, nearly four times fewer than English Canada and six times fewer than English Quebec. In addition, the ratio of undergraduates to PhDs is three to four times higher in francophone universities than in the others (Table 2).

Table 2

Number of Doctoral Degrees Awarded in 1972
in the United States, Canada and Quebec

Region	Population (millions)	PhDs Awarded	Population /PhD Ratio	Undergraduate /PhD Ratio
United States	205.0	33,780	6,069	25
English Canada	16.8	1,573	10,680	36
English Quebec	1.2	174	6,897	27
French Quebec	4.8	124	38,710	114

Source: Noah Meltz, Projections of University Graduations by Field of Study in Ontario, Canada and the United States, 1969-70 to 1980-81, Institute for the Quantitative Analysis of Social and Economic Policy, University of Toronto, 1971. These data must be carefully interpreted since they do not indicate the place of origin of students nor the place of work of graduates. For instance, a good percentage of McGill students are Quebec Francophones.

For the proportion of PhDs awarded in francophone universities in relation to the total Francophone population to reach that of Quebec's anglophone universities in 1972, they would have had to award 697 PhDs - an increase of 562 per cent. And to reach the level of English Canada, they would have required 457 PhDs, a growth of 369 per cent. However, such increases aren't forthcoming and would not enable Quebec francophone universities to catch up. Anglophone universities in Canada and particularly Quebec attract large numbers of foreign students to their graduate studies, which is not the case with Quebec's francophone universities; nor will it be in the near future. Something else compounds this situation: francophone students in Quebec, especially those in the humanities, have traditionally pursued their doctoral studies outside Quebec: in France, the United States and, more recently, Ontario.

It is possible that this imbalance in Quebec may be corrected, for present trends are encouraging. The proportion of students in francophone universities has reached or exceeded 60 per cent of the Quebec student population at the three levels during the last three years. The number and percentage of graduates, especially PhDs, should increase considerably in francophone universities during the next few years. The progress achieved should result in better quality. Let us hope that francophone universities become a centre of attraction for francophone students and subsequently for other Francophones outside Quebec.

At this stage, any restriction of studies at the master's and, especially, doctoral level must be avoided at all costs. Whether initiated by Quebec or Ottawa, this measure would hinder the growth of scientific education in Quebec. It would also be detrimental to francophone universities, which would be seriously affected at a time when they are starting to grow and have reached the point where the universities of Toronto, British Columbia and McGill were five or 10 years ago. These three universities would undoubtedly deplore having to slow the growth of graduate studies for a period of time. For francophone universities, it would be catastrophic.⁴

With respect to graduate studies, Quebec Francophones form an under-educated society in comparison to North American society as a whole. This situation of under-development could be corrected if the efforts of the last 10 years were encouraged to reach fruition; for this to happen, francophone universities must be given adequate resources, and their teachers must work harder than ever

over the next five or six years.

2. Research

Until very recently, in Quebec as well as in the rest of Canada, research was nearly always associated with the natural and health sciences. And in the health sciences, McGill was the most developed institution in Quebec. Research in the humanities and social sciences was perceived everywhere as Cinderella-like and treated very lightly. Worse still, it was ignored.

It is surprising to note how rapidly research in the human sciences, particularly the social sciences, has matured in Quebec's francophone universities. We will return to this very important point in the evaluation of graduate studies in the human sciences in Canada. In this section, we will determine as accurately as possible the position of research in the human sciences in Quebec's francophone universities in relation to its anglophone universities, as well as those of Ontario and the rest of Canada. We will also take into account data on the natural and health sciences as a basis for comparison. Three questions will be examined: the portion of research grants made to Quebec by the federal government; the total research grants awarded to Quebec universities; and the respective participation of the federal and Quebec governments in university research.

With regard to the relative significance of the figures and percentages quoted for Quebec, one should recall that Francophones comprise approximately 80 per cent of Quebec's population and 65 per cent of the student population at the three university levels.

Before the particular aspects of research, let us consider the attitude of the Quebec government: according to some, the government "favors" the francophone universities to the detriment of the anglophone ones; to others it "counterbalances" the superior resources of the anglophone universities by giving the francophone ones a greater share of its general grants.

The overall expenditures applicable to current years for all universities in Quebec increased by 21.5 per cent from 1973-74 (\$347.9 million) to 1974-75 (\$422.7 million). This increase was slightly greater for the francophone universities than for the anglophone universities. The percentage increase of 24.8 per cent in the universities' income from the Quebec government (from

\$248.4 million to \$310.2 million) was slightly more than the total expenses. There were considerable differences here between the anglophone and francophone institutions: the latter group received a substantially greater increase than the former. There was also a great variation among the universities, with the lowest being Concordia and the highest Montreal.

The francophone universities receive a much larger proportion of their total income from the Quebec government than do the anglophone institutions: the former get almost 69 per cent from this source and the latter about 58 per cent. The University of Quebec is the most heavily subsidized Quebec university, with 80 per cent of its income coming from the province. The most heavily provincially subsidized anglophone university is Concordia; Bishop's gets the least provincial support. The share contributed by the province did not change markedly between 1973-74 and 1974-75.

The francophone universities received almost three-quarters of the Quebec government grants and almost 70 per cent of total government grants. Montreal got the largest proportion of both provincial and total funds going to the francophone universities. Quebec followed in second place in provincial money received, and Laval was second in total funds received. McGill was clearly dominant among the anglophone institutions. The institutional rankings across the province were: Montreal, Laval, McGill and Quebec in highest total income from government; and Montreal, Quebec, Laval and McGill in income from the Quebec government (Appendix IV,8).

In the following three sections, we will examine grant-aided research in Quebec universities to determine the latter's share of federal grants, their total research grants and the share of the federal government and Quebec government. In all cases, we will distinguish between francophone and anglophone universities, as well as between the human sciences and the natural and health sciences.

We have data for only three years - 1971-72, 1972-73, 1973-74 - and in many cases only for the years 1972-73 and 1973-74. Many more years would have been needed to establish a conclusive time-series; our data would have been more complete had they extended to 1974-75 and 1975-76. Unfortunately, at the time of writing, the official bodies had not yet collected these data, nor had the universities done so for their own purposes. The available data enable

us nonetheless to present an accurate overall picture. Any corrections resulting from a more extended time-series would bear only on specific points and should not significantly affect the overall situation.

We are the first to collect data systematically with a view to highlighting the position of Quebec in relation to Canada as a whole, of Quebec's francophone universities in relation to anglophone universities and of the human sciences in relation to the other two major fields of research. This pioneer role has compounded our difficulties. The data on research have not yet been gathered into categories corresponding to our questions. Our pioneering was another potential source of error. In spite of all precautions, we cannot be sure we have detected and corrected these sources of error. Yet our overall compilations are valid.

We hope our manner of reorganizing the data on grants to scientific university research will be taken as a model by those who assess the research output of the human sciences. This model will be more useful, as it is improved and based on time-series of undeniable value and on better statistical data from the universities.

Our assessment of Quebec universities could serve as a framework for similar analyses in the other provinces. It would be very important, for example, to determine accurately, with statistics that speak for themselves, how the overwhelming predominance of the University of Toronto affects the possibilities of development of other Ontario universities.

a. Proportion of Research Grants Allocated to Quebec Universities by the Federal Government

The total of direct research grants⁵ from the federal government for the year 1972-73 was \$101,482,935. Quebec received \$25,581,821 or 25.2 per cent of this amount. The percentages varied considerably from one sector to the other, ranging from 35.7 per cent of grants to the health sector to 19.7 per cent of grants from the National Research Council. Quebec's share of Canada Council grants was 35.2 per cent.

Ontario was on the whole well ahead of Quebec, since it received 40.4 per cent of total grants. These percentages varied between 44.6 per cent of National Research Council grants and 34.7 per cent of Medical Research Council grants. Ontario's share of Canada Council grants was 43.2 per cent (Appendix IV,9)

The three major Quebec universities are among Canada's "top 10" for total grants received in 1972 and 1974 from federal research granting bodies. There is one exception: Laval University received only limited aid from the Medical Research Council. As could be expected, the University of Toronto generally headed the list. McGill University ranked second or third, except for the aid received from the Medical Research Council which placed it first in 1972, but was in eighth position in 1972 and in sixth place in 1974 in terms of funding received from the Canada Council. The University of Montreal was ranked ahead of Laval except for grants from the Canada Council.

Both Toronto and British Columbia were in the "top five" listing three times, and Montreal and McGill twice. Each of these universities, as well as Alberta, were in the "top 10" of each of the granting councils.

If universities are ranked according to weighted scores, the "top five" universities in order are Toronto, Montreal, British Columbia, McGill and Alberta; the only differences between this format and the ranking based on the simple summation of dollars is the interchange in the ranking of Montreal and McGill. The weighted score considers only the funding within the specific council and allows inter-council comparisons of rank regardless of the disparities in the size of their budgets (i.e., in the second type of ranking a higher ranking with the National Research Council means more than a higher rank with the Canada Council, since the dollar value of the Canada Council placing would be minor compared with the National Research Council).

Generally speaking, both the National Research Council and the Medical Research Council kept the same universities in the "top 10" in 1974 as in 1972, with the exception of Sherbrooke, which dropped from tenth place in 1972 to twelfth in 1974 in MRC funding. But the Canada Council retained only eight of the 1972 "top 10", with the ninth place university (Queen's) in 1972 plummeting to 22nd place and the 10th place institution dropping to 13th.

Both the NRC and the MRC had much more stability in the rank order of their "top 10" than did the Canada Council. The NRC had only one change within the "top five", and that by an interchange of the fourth and fifth ranked universities; for positions six to 10, one university lost two places and two others gained one each. The MRC had one-position changes between first and second and between fourth and fifth. The Canada Council, on the other hand,

did not have one single institution in the same rank in 1974 as in 1972; three universities changed their order by moving one position of rank, three by two positions, and the rest by three or more.

For each of the granting councils, the percentage distribution of funds received by each of the "top 10" universities has been remarkably alike for both of the years studied. As an illustration, the sixth rank for each council was randomly selected and the percentages compared (Table 3).

Table 3

Percentage of Funds Received by Sixth-Place University

Granting Council	1972	1974	% change
National Research Council	5.1%	5.7%	-11.8
Medical Research Council	6.2%	6%	-3.2
Canada Council	5.6%	4.6%	-17.9

The percentages have not changed much from year to year. In addition, it is interesting to note that each council records about the same percentage for this rank position (i.e., 5 to 6%), which does not hold true for ranks one through three. But strong similarities do persist in the percentages of funds allocated to ranks four through 10 (Appendix IV, 10).

Quebec's share was considerably less than Ontario's, namely 62.4 per cent of the latter. Quebec universities received 29.3 per cent less Canada Council funding than Ontario universities and 65.8 per cent less National Research Council funding than Ontario universities. However, they did receive 1.4 per cent more for the health sector as a result of the exceptional performance of McGill in this field, as will be seen later (Appendix IV, 9).

Out of \$25,581,821 in federal research grants allocated to Quebec in 1972-73, francophone universities received \$15,382,593, or 60.1 per cent, and

anglophone universities \$10,199,228, or 39.9 per cent. Research funds, however, were unequally divided among the sectors. Francophone universities received 64.2 per cent of the National Research Council grants and 53.6 per cent of the health sector grants; however, they received 80.1 per cent of the Canada Council grants. Overall, including departments and bodies as well as the Defence Research Council, anglophone universities received an average of 66 per cent of the total funds allocated to francophone universities (95.2% for the health sector, 47% for the natural sciences and 25% for the human sciences).

The funds from the Canada Council account for only 5 per cent of overall funds and 2.5 and 6.7 per cent respectively of the research funds allocated by the federal government to anglophone and francophone Quebec universities. The relative advantage of the latter concerning aid from the Canada Council is of little significance in absolute terms (Appendix IV,11 and 12).

In summing up the total research grants of the federal government to Quebec universities according to the major research fields, we find that 50.9 per cent are made to the pure and applied sciences, 40.3 to the health sciences and 8.8 to the human sciences. Francophone universities receive 65.8 per cent of the federal grants in the pure and applied sciences, 51.2 in the health sciences and 68 in the human sciences (Appendix IV,12 and 13).

McGill University receives nearly all the federal research grants to Quebec anglophone universities. In 1972, McGill alone received almost half the federal grants allocated to the health sciences in Quebec. In this field, it exceeded the University of Montreal by 45 per cent and Laval University by 543 per cent. On the other hand, McGill does not do as well in the human sciences, receiving only 27.3 per cent of the overall grants but exceeding Laval University and the University of Montreal by about 10 per cent. These two universities share federal grants about evenly, except for the health sciences where Laval is surpassed by the University of Montreal and also by the University of Sherbrooke. For its part, the University of Quebec receives only 7.9 per cent of the grants allocated to francophone universities and 4.7 per cent of the federal grants to Quebec universities (Appendix IV,13).⁶

The University of Quebec is unique in Canada. Its seat is in Quebec City, and it has four other campuses (in Montreal, Trois-Rivières, Chicoutimi and Rimouski) and some institutes or independent schools. It would be a laborious

and often technically very difficult task in the present context to differentiate between each of these units. The University of Quebec allocates approximately 2 per cent of its operating funds to research. Moreover, there is a certain distribution of work among the other campuses. The University of Quebec at Montreal (UQAM) is by far the largest in terms of student population and programs in the human sciences. However, it does not receive an equivalent percentage of the total research funds allocated to the University of Quebec as a whole. But the annual fluctuations are too extensive to determine any constants. In view of the rapid expansion of the UQAM and the relative stagnation of the other campuses, one must anticipate that in the years ahead it will experience rapid growth of the main resources underlying the development of graduate studies: the library and research grants. If this does not occur and the institution fails to find permanent solutions to the chronic problems of internal management which hinder its development, the UQAM will fail to develop the quality of graduate studies programs in the human sciences, that its teachers, many of whom are highly qualified, have come to expect.

We also have data for the years 1973-74 and 1974-75 (Appendix IV, 14, 15, 16, 17, 18 and 19). The variations in absolute numbers and percentages between these two years are minimal. Grants from the Canada Council increased by 23.4 per cent (35.3% for Quebec), those of the National Research Council by 2.5 per cent (3.3% for Quebec) and those of the Medical Research Council by 14.4 per cent (10.2% for Quebec). With the inflationary factor, this results in a relative decline in all cases. Quebec's share rose from 30.6 to 35.3 per cent for the Canada Council, remained steady at around 20 per cent for the National Research Council and fell from 35.4 to 34.1 per cent for the Medical Research Council. It increased, therefore, only for the Canada Council. Finally, the portion going to anglophone universities in relation to the overall grants made to Quebec universities was 19.9 per cent in 1972-73 and 16.8 per cent in 1974-75. For the National Research Council, it remained at 35.8 per cent for both years, but for the Medical Research Council, it declined from 51.4 to 50.3 per cent.

In 1972-73, the total funds directly allocated by the federal government to research in the human sciences at McGill University exceeded the funds received by the two major francophone universities, because the grants of the

National Research Council and particularly the Medical Research Council strongly favored McGill.

The only significant change from 1972-73 to 1973-74 was for the Canada Council, and it favored the francophone universities. The federal grants allocated by the Canada Council to these universities greatly exceeded those to anglophone universities. Thus, for 1972-73, anglophone universities received \$257,239 and francophone universities \$1,033,441 or 80 per cent of overall funding to Quebec. For 1973-74 and 1974-75, the share received by francophone universities rose to 84 per cent. The universities of Laval and Montreal were well ahead of McGill for these years.

The relative importance of Canada Council research grants in the human sciences to Quebec universities has been declining in the last few years in comparison to other funding bodies. Provincial and federal make-or-buy policy is an important reason for this shift.

Based on several indicators, we have established the proportion of federal grants for free research provided by the three major research councils to each Canadian province and to Quebec's anglophone and francophone universities. There are many possible calculations: in proportion to population, to graduate students or to teachers; but all these calculations would give rather similar results. Therefore, we limited ourselves to establishing the proportion of grants made by the three major federal councils in 1972-73 and 1974-75 according to the Canadian population, that of Ontario, of Quebec and of French and English Quebec (Table 4).⁷

On the whole and for the National Research Council, Quebec is well below the Canadian average and, what is more, below that of Ontario. It exceeds the Canadian average in the case of the Canada Council and the Medical Research Council. Regarding the latter, however, the advantage is the result of the exceptional performance of McGill. In this field of research, Quebec's anglophone universities almost double the Canadian and Ontario averages, but its francophone universities do poorly and reach only 70 per cent of the averages of Canada and Ontario. In the case of the Canada Council, Quebec slightly exceeds the Canadian average. Compared to Ontario, it received 14 per cent less in 1972-73, but 15 per cent more in 1974-75. Quebec's francophone universities received the same amount of Canada Council funding per capita as its anglophone

Table 4

Proportion of Grants of the Three Federal Councils
to Ontario and Quebec Universities,
1972-73 and 1974-75 (dollars per capita)

Source of funding	Recipient				
	Canada	Ontario	Quebec	French Quebec	English Quebec
Medical Research Council					
1972-73	1.25	1.31	1.55	0.94	3.98
1974-75	1.43	1.47	1.70	1.21	4.29
National Research Council					
1972-73	2.49	3.11	1.71	0.94	3.08
1974-75	2.55	3.07	1.77	1.42	3.18
Canada Council					
1972-73	0.20	0.24	0.21	0.21	0.21
1974-75	0.25	0.26	0.29	0.30	0.24
Total					
1972-73	3.94	4.66	3.47	2.09	7.27
1974-75	4.23	4.80	3.76	2.93	7.71

Source: See Appendix IV, 14, 15, 16, 17, 18 and 19.

universities in 1972-73 but exceeded the latter by 25 per cent in 1974-75 (Table 4).

Canada Council funding fluctuates more because it is not very extensive: minor changes in the absolute amounts result in considerable fluctuations once prorated according to the total population of various categories of recipients.

We have regrouped the federal government grants in 1972-73 for free research in Quebec for the three fields of research; in addition to the three major councils, the other federal bodies mentioned in Appendix IV, 9 were also taken into account (Table 5). The amounts per capita are higher in all cases, and they serve to confirm the well-known predominance of Quebec's anglophone

Table 5

Proportion of Federal Grants to Free Research in Quebec,
Prorated According to Population,
by Field of Research, 1972-73

Field of research	Quebec	French Quebec	English Quebec
Human sciences	0.37	0.36	0.60
Health sciences	1.72	1.26	4.19
Natural Sciences	2.17	1.78	3.71
Total	4.26	3.40	8.50

Source: Appendix IV, 12.

over its francophone universities, even in the human sciences. This predominance is of the order of 250 per cent overall - 333 per cent for the health sciences and 67 per cent for the human sciences. McGill receives almost all of the federal funding to Quebec anglophone universities, except for the human sciences where Concordia University receives approximately 30 per cent of the grants.

Mission-oriented research contracts must also be considered in addition to the federal grants awarded to free research. Make-or-buy policy has been increasing from year to year. Each year, most independent commissions and federal departments contract to have a great deal of research done by university researchers, and this amounts to many millions of dollars. Our data on make-or-buy policy unfortunately are incomplete. Often, individual agreements are concluded with teachers or universities, and the federal government does not account separately for these research funds. Louis-Paul Dugal of the Council of Universities has patiently compiled data from the directory of university grant-aided research funded by the federal government; these data are incomplete, but they do show the importance of make-or-buy policy and its strong advance between 1972-73 and 1974-75.⁸

Total grants allocated to universities for mission-oriented research by 28 federal bodies rose from \$18,620,338 in 1972-73 to \$24,638,458 in 1974-75 - an increase of 32.3 per cent in two years. Quebec's share was \$4,701,528 in 1972-73 (25.2 % of the total) and \$6,464,517 in 1974-75 (26.2% of the total). Francophone universities received \$3,314,787 or 70.5 per cent of these funds in 1972-73 and \$4,456,966 or 68.9 per cent in 1974-75. We do not know what proportion goes to the human sciences; it is probably very low, but it is increasing.⁹

b. Total Research Grants to Quebec Universities

The Higher Education Branch of the Quebec Government Department of Education has prepared a summary of the total research grants received by Quebec universities in 1972-73 and 1973-74.¹⁰ Grants to Quebec totalled \$46,063,467 in 1972-73 and \$50,816,390 in 1973-74 for an absolute increase of 10.3 per cent, but this increase was almost negated by a high rate of inflation. The growth rate was 11.6 per cent for francophone universities and 7.9 per cent for anglophone

Distribution of Research Grants to Francophone and Anglophone Universities
in Quebec, by Field of Research, (1972-73 and 1973-74)

Field of research	Total		Francophone universities		Anglophone universities		Francophone universities funding as a percentage of total francophone population	
	1972-73	1973-74	1972-73	1973-74	1972-73	1973-74	1972-73	1973-74
Health sciences								
\$	12,374,274	10,491,900	6,181,988	4,416,557	6,192,286	6,075,343	50	42.1
%	26.9	20.6	20.3	13	39.5	35.9		
Δ % 1972-73 to 1973-74		-15.2		-28.6		-1.9		
Natural Sciences								
\$	21,801,530	26,458,676	15,389,479	18,839,479	6,411,599	7,619,197	70.7	71.2
%	47.3	52.1	50.6	55.6	40.9	45		
Δ % 1972-73 to 1973-74		21.4		22.4		18.8		
Human sciences								
\$	9,014,737	11,266,613	7,578,410	8,989,575	1,436,327	2,277,038	84.1	79.8
%	19.6	22.2	24.9	26.5	9.2	13.5		
Δ % 1972-73 to 1973-74		25		18.6		58.5		
Others and unspecified								
\$	2,872,926	2,599,201	1,236,433	1,647,895	1,636,493	951,306	43	63.4
%	6.2	5.1	4.1	4.9	10.4	5.6		
Δ % 1972-73 to 1973-74		-9.5		33.3		-41.9		
Total								
\$	46,063,467	50,816,390	30,386,762	33,893,506	15,676,705	16,922,884	66	66.7
%	100	100	100	100	100	100		
Δ % 1972-73 to 1973-74		10.3		11.5		7.9		

Source: Government of Quebec, Department of Education, Higher Education Branch, Appendix IV, 20 and unpublished data.

Δ - percentage change

universities (Table 6).¹¹ The francophone universities received two-thirds of the grants. This is similar to the proportion of Francophones enrolled in graduate studies at Quebec universities but well below that of the francophone population of Quebec.

Francophone universities received only one half of grants to the health sciences, 70 per cent of those to the natural sciences but 80 per cent of those to the human sciences. However, the latter account for only 20 per cent of all university research grants. At the time of writing, there were no time-series available to indicate how much the latter percentage had risen over the past 10 years.

We have also determined the distribution of total research grants among the universities for 1972-73 and 1973-74 (Table 7). McGill heads the list of Quebec universities with respect to grants received. The University of Montreal ranks second and seems to be gaining ground on Laval. The University of Quebec is slightly ahead of Sherbrooke but could outdistance the latter in the next few years. McGill alone receives more than 30 per cent of all the grants made to Quebec universities. Some 40 per cent of McGill's grants go to the health sciences and another 40 per cent to the natural sciences. Its percentage of grants in the health sciences is at least four times greater than each of the francophone universities except Montreal, and in the natural sciences it is at about the same level as Laval and the University of Montreal. On the other hand, less than 10 per cent of its research funds are allocated to the human sciences, as compared with 23 to 30 per cent at Laval and the University of Montreal and 35 to 40 per cent at the University of Quebec.

Laval University shows itself to be very weak in the health sciences. Its main emphasis is on the natural sciences, and it comes second after the University of Montreal in the human sciences. The overall funds allocated by Laval to research remained at the same level in 1972-73 and 1973-74, and its percentage of the total grants to universities declined from 23.4 to 21 per cent.

The University of Montreal is the only university with a high rate of increase between the two years, namely 22 per cent. It could well have the fastest rate in Canada. While strengthening its natural sciences, it also appears to be asserting itself in the health sciences and playing a preponderant

Total Research Grants by University and Field of Research (1972-73, 1973-74)

University and Field of Research	% of University's		% of University's		Percentage of Total by Field		Percentage Change 1972-73 to 1973-74
	1972-73	Total Grants	1973-74	Total Grants	1972-73	1973-74	
Laval							
Health sciences	1,188,968	11	1,017,790	9.3	9.5	9.6	-14.4
Natural sciences	6,622,405	62.5	6,941,452	64	30.4	26.2	4.8
Human sciences	2,552,593	23.9	2,643,142	24.6	28.3	23.5	3.5
Other and unspecified	396,481	3.6	232,101	2.1	13.8	8.7	-41.5
Total	10,760,447		10,834,491		23.4	21	0.1
Montreal, Hec, Poly							
Health sciences	2,720,708	24	1,708,664	12.3	22	16.3	-37.2
Natural sciences	5,618,478	49.5	7,218,615	52.3	25.8	27.3	28.5
Human sciences	2,671,588	23.5	3,964,562	28.6	29.7	35.2	48.7
Other and unspecified	326,218	3	946,791	6.8	11.2	36.2	+190.2
Total	11,336,992		13,838,632		24.6	27	22
Sherbrooke							
Health sciences	1,362,078	35.9	1,133,984	27.2	11	10.8	-16.7
Natural sciences	1,648,334	43.4	2,302,423	55.3	7.6	8.7	39.7
Human sciences	502,025	13.3	585,807	14.1	5.6	5.2	17.4
Other and unspecified	277,494	7.3	143,829	3.4	9.6	5.6	-48.1
Total	3,789,931		4,166,045		8.2	8.2	10
University of Quebec							
Health sciences	910,234	20.2	556,116	11	7.4	5.3	-39
Natural sciences	1,500,713	33.3	2,376,980	47	6.9	9	58.4
Human sciences	1,852,203	41.3	1,796,068	34.9	20.5	16	-3
Other and unspecified	236,240	5.2	325,173	6.1	8.3	12.2	37.6
Total	4,499,392		5,054,337		9.8	9.9	12.3
Francophone total	<u>30,386,762</u>		<u>33,893,506</u>		<u>66</u>	<u>66.7</u>	<u>11.6</u>
McGill							
Health sciences	6,165,596	41.9	6,075,343	38.4	40.8	57.9	-1
Natural sciences	5,808,497	39.5	6,928,545	43.9	26.7	26.2	19
Human sciences	1,058,691	7.2	1,827,540	11	11.7	16.2	73
Other and unspecified	1,636,493	11.1	940,069	5.8	5.7	36	-42.6
Total	14,669,277		15,771,497		31.8	31	8
Concordia							
Health sciences	26,690	2.7		0	0.02	0	
Natural sciences	589,836	60.2	678,408	60.7	3	3	15
Human sciences	363,645	36.7	427,661	38.2	4	3.8	19
Other and unspecified		0	11,237	1	0	0.4	
Total	980,171		1,117,306		2	2	14
Anglophone total plus Bishop	<u>15,676,705</u>		<u>16,922,884</u>		<u>34</u>	<u>33.3</u>	<u>7.9</u>
Overall total	<u>46,063,467</u>		<u>50,816,390</u>		<u>100</u>	<u>100</u>	<u>10.3</u>

Source: Government of Quebec, Department of Education, Higher Education Branch. Data based on Appendix IV, 20.

role in Quebec research in the human sciences.

The University of Sherbrooke is second to McGill in allocating the highest percentage of research funds to the health sciences but seems to be neglecting research in the human sciences. On the other hand, both the University of Quebec and Concordia place strong importance on the human sciences, each allocating about 40 per cent of their research funding to this field.

These figures and percentages reflect institutional choices. Thus, McGill's excellence in the health sciences and its relatively lesser interest in the human sciences result from a long tradition and its particular situation in Quebec. Similarly, the emphasis on the human sciences at the University of Quebec is the direct result of the circumstances that led to its establishment. The universities of Laval and Montreal excel in the human sciences in Canada, the reasons for this lying in history and the particular situation of Quebec in North America.

The friendly rivalry that has always existed between Laval and the University of Montreal extends to research activities. But the very unequal performance of these two institutions at the research level in 1972-73 and 1973-74 could indicate that this will soon be resolved, with the balance being tipped in favor of the University of Montreal - an observation supported by many of the quantitative indicators of excellence.

Using data from the SIGU (University Information and Management Service), L.-P. Dugal has also determined the amount of research grants allocated to the various disciplines in the human sciences. For 1972-73 and 1973-74, Laval is well ahead of the others in political science, the University of Montreal in economics and McGill in psychology. However, one must not conclude that this is a permanent situation, especially for political science, in view of the relatively minor funds involved. One or two major projects at any given time can make a marked difference, as was the case these past few years at Laval in political science.

c. Participation of the Quebec and Federal Governments

Public and private bodies from some 20 different categories (Canadian and foreign, federal, provincial and municipal) provide research grants to Quebec universities. The federal and Quebec governments are by far the major funders; together they

University field	1972-73		1973-74		Quebec/Federal
	Quebec	Federal	Quebec	Federal	
Iaval					
Health sciences	234,673	827,498	253,298	665,722	38.1
Natural sciences	2,030,142	4,256,293	1,561,341	4,619,483	33.9
Human sciences	1,570,735	891,198	769,672	1,468,951	52.4
Unspecified	15,810	343,044	6,708	215,982	3.1
Total	3,851,360	6,318,033	2,591,018	6,970,138	37.2
Montreal, Hec, Poly					
Health sciences	180,672	1,940,855	218,900	1,024,688	21.4
Natural sciences	1,075,808	3,981,282	1,124,211	4,964,290	22.7
Human sciences	718,815	993,963	1,231,178	1,367,519	90
Unspecified	80,000	193,218	365,950	473,133	77.4
Total	2,055,295	7,109,318	2,940,239	7,829,630	37.5
Sherbrooke					
Health sciences	285,167	786,328	188,678	702,994	26.8
Natural sciences	353,500	1,223,848	253,155	1,824,977	13.9
Human sciences	276,575	175,325	330,507	155,945	211.4
Unspecified	32,477	192,181	10,100	130,079	7.8
Total	947,719	2,377,682	782,440	2,813,995	27.8
University of Quebec					
Health sciences	11,000	818,140	58,000	413,254	14
Natural sciences	408,800	693,816	655,672	1,266,538	51.8
Human sciences	1,103,250	427,162	896,940	630,242	142.3
Unspecified	157,000	42,700	176,000	106,304	165.6
Total	1,680,050	1,981,818	1,786,612	2,416,338	73.9
Francophone total	8,534,424	17,786,851	8,100,309	20,030,371	40.4
McGill					
Health sciences	241,053	4,117,561	244,687	3,340,282	7.3
Natural sciences	441,356	4,737,644	457,300	5,610,338	8.2
Human sciences	156,980	544,880	188,405	1,254,666	15
Unspecified	49,783	1,105,768	36,975	634,396	5.8
Total	889,172	10,505,853	927,367	10,839,682	8.6
Concordia					
Health sciences		25,390			
Natural sciences	137,560	418,992	151,700	471,826	32.2
Human sciences	89,820	170,357	53,575	345,573	15.6
Unspecified			11,000		
Total	227,380	614,739	216,275	817,399	26.5
Anglophone total plus Bishop	1,116,552	11,145,882	1,143,649	11,657,081	9.8
Overall total	9,650,976	28,932,733	9,243,951	21,721,263	29.2

Source: Government of Quebec, Department of Education, Higher Education Branch. Appendix 21, 1 to 7, and computer data specially compiled for the Commission.

provide over 80 per cent of all research grants to universities. What is the respective share of the two major granting sources for each of the main research fields and for each university? The Higher Education Branch has kindly compiled these data for us (Table 8).¹²

The share provided by the Quebec government in 1972-73 was \$9,650,976, or 33.3 per cent of that of the federal government, which was \$28,932,733. It decreased to 29.1 per cent in 1973-74 (\$9,243,951 provincial and \$31,721,263 federal).¹³

Upon examining Table 8, we see that relative to federal funding the Quebec government provides more aid to francophone than to anglophone universities (over 40% against barely 10%). Francophone universities receive 89 per cent of the Quebec government's grants but only 63 per cent of the federal government grants. While the Quebec government's share in 1973-74 comes to 29 per cent of all federal and provincial government grants received by francophone universities (43 per cent in the case of the University of Quebec), it is only 9 per cent for anglophone universities. The differentials are greater in the human sciences. In 1973-74, in this field francophone universities received 48 per cent of their government research funds from the Quebec government (58.7 per cent for the University of Quebec) and anglophone universities only 15 per cent. In the natural sciences, 25 per cent of their research funds come from the Quebec government, compared to 7 per cent for anglophone universities. Even in the health sciences, anglophone universities - McGill - receive only 7 per cent of their research funds from the Quebec government against 20 per cent for francophone universities. This situation has a serious effect on francophone and anglophone universities, particularly since the Quebec government has systematically funded university research only over the last few years. By inference, francophone universities will turn increasingly to the Quebec government for their research funds, while anglophone universities - especially McGill - must continue to look to the federal government. This is their only chance of maintaining their sectors of excellence. The process of "provincialization" will become more marked for the former, but the latter will remain dependent on the federal government. The political implications of this situation cannot be underestimated. McGill may only be able to maintain its quality by becoming a "federal university".

This situation results from the objectives of Quebec's program of concerted

action and training of researchers. This program seeks above all to correct the unequal distribution of federal grants that favors McGill. Since this objective is far from being reached, the Quebec government in the future will probably favor the francophone universities even more, thereby increasing their "provincialization" but also the "federalization" of McGill. The program of concerted action and training of researchers has another goal: to favor the smaller universities - the University of Quebec and, to a lesser degree, Sherbrooke and Concordia - over larger institutions.

In 1972-73, Laval University benefited more from Quebec grants than the University of Montreal, but the proportions were about equal in 1973-74. However, a trend cannot be said to exist at this point, as at least five years of data would be necessary to determine any pattern.

Finally, Quebec's contribution to research is highest in the humanities. Very significantly, the Quebec government's share generally equals or exceeds that of the federal government in the human sciences at francophone universities. The Canada Council treats Quebec's francophone universities the same as the others; the marked reticence of these universities toward the Council can undoubtedly be traced to this situation. This orientation of research grants toward the human sciences probably results from the nature of the provincial government's main interests, which differ from those of the federal government that bear mainly on the natural and health sciences. The Quebec government, however, provides more grants to the natural sciences than the health sciences.

Notes

1. We limit our analysis to the Quebec university system. The following observations could also be applied to universities where French is the main or a second language but which are located in New Brunswick or Ontario, for example, Moncton, Ottawa and Laurentian University. For these institutions, however, the approach should be focused on the particularities of the systemic environment in which they operate.
2. More data can be drawn from the tables shown in these appendices, and we ask the reader to refer to them when necessary. These data are related to professors who have the status of full-time university teachers and are referred to as professor-teachers by the statisticians of the Department of Education, as opposed to administrators, teaching and research assistants and technicians. Except at the University of Montreal, the percentage of PhDs is higher among administrators than among professors involved in research. The situation at McGill is similar to the one in Ontario universities. In that province, 72 per cent of the full professors and 62.5 per cent of the associate and assistant professors are Canadian citizens. As will be shown, the main reason for the greater percentage of Canadian citizens in French-language universities is that these universities, because of linguistic and cultural factors, were not able to recruit from as large a pool of specialized teaching people as the English-language universities.
3. These data were made available by the Higher Education Branch (DIGES) of the Quebec Department of Education.
4. The debate over the surplus of PhDs in the work force, assuming that it is a valid one, is only indirectly aimed at the French-speaking PhD holders, the reason being that their number is added to their English-speaking counterparts. If we look exclusively at the number of French-speaking PhD holders in Canada, it is so small in most sectors that a Malthusian policy in the universities would be unsound.
5. These data were obtained from the Research Information Centre of the National Research Council. The Report quotes other sources, for example, Statistics Canada, whose data vary from ours. Research includes indirect costs which can amount to as much as 30 or 40 per cent of the direct costs, but which are difficult to evaluate. The Wildi Committee study is the best on this topic and has already been quoted: "Coûts indirects des activités d'enseignement et de recherche à l'université Laval" (Indirect Costs Related to Teaching and Research at Laval University), Laval University, 1975.
6. The research grants to Armand Frappier Institute are not included in these figures.
7. It is understood that the data contained in our Report make all these cross-references possible.

8. The compilations of Louis-Paul Dugal contain 62 tables which will be included in an upcoming report by the Council of Universities. For this reason, we do not feel it necessary to reproduce them. We have therefore limited ourselves to more comprehensive computation showing the major tendencies.
9. Complete data on the importance of research grants to the social sciences from public organizations other than the Canada Council are not available to us. In addition to the funds from the National Research Council, the Medical Research Council and other federal, provincial and municipal departments and agencies, the important role of task forces and commissions of inquiry should be underlined. Some of these bodies have probably influenced the approach and objectives of the social sciences as much or more than the Canada Council. Take, for example, the Rowell-Sirois Commission, the Royal Commission on the National Development of the Arts, Letters and Sciences, the Royal Commission on Bilingualism and Biculturalism at the federal level, and others such as the Tremblay Commission, the Gendron Commission on the promotion of the French language and the survey of the Regional Development Bureau for Eastern Quebec (BAEQ). The share of these research funds allotted to each discipline varies greatly. Economics, which receives only 8 per cent of Canada Council grants, receives on the other hand from 45 to 50 per cent of oriented research funds. See Walter Hettich, "Federal Science Policy and Social Science Research in Canadian Universities," Canadian Public Administration, 1971, pp. 113-128.
10. See Quebec Government Department of Education, Higher Education Branch (DIGES), La recherche subventionnée et commanditée dans les universités du Québec, 1972-73, 1973-74 (Funded and Commissioned Research in Quebec Universities, 1972-73, 1973-74). These data have been used in preference to those of the Conseil supérieur de l'Éducation because they are more comprehensive. However, those of DIGES differ considerably from those appearing in the Directory of Federal Grants to University Research. It is hoped that, in the future, the various sources of information dealing with statistics on universities will standardize their criteria and category definition. The tables appearing in this section are compilations from Appendix IV, 20 and 21. They are part of a broader scheme of information which will soon be released by DIGES.
11. The categories "others" and "unspecified" include amounts which cannot be allotted to a specific field or which are not used for research itself. The 6 per cent decrease in the health sciences between the two years is due to a change in the criteria defining this category. The amounts thus subtracted from the health sciences were carried over mainly to the natural sciences. This transfer is responsible for the 5 per cent increase in the latter field. However, the time-series is not long enough to determine longer-term trends.

12. These data are very voluminous. As they will be published by DIGES, we will reproduce only the main parts in an appendix (Appendix IV, 21). Small corrections were made after verification. These corrections are included in Table 8. Because a different computation method was used in this instance, the amounts showing for the federal government vary from the previous ones. For 1972-73, they are higher by about \$3,300,000. This difference seems partly due to the fact that, unlike the National Research Council, DIGES includes the Canadian International Development Agency (CIDA) funding in the research grants.
13. As a simple comparison, grants from the Ontario Government to Ontario universities in 1972-73 represented 19.3 per cent of federal grants.

II QUEBEC'S FRANCOPHONE UNIVERSITIES: A PARTICULAR CASE

If all the departments in Quebec's francophone universities were like their human sciences departments, they would be in relatively good shape, even when compared to Canada's best universities. Montreal and Laval offer more programs in the humanities and social sciences than universities in the Atlantic provinces, on the Prairies and on the Pacific Coast; they compare favorably with the University of Alberta and the University of British Columbia, which are of comparable size, but are surpassed by the University of Toronto, which covers more disciplines in the human sciences. In addition, Toronto is the only university to clearly surpass Montreal and Laval in most of the other indicators of excellence, thereby confirming its preeminence over all Canadian universities. Besides Toronto, universities such as British Columbia, Alberta and McGill are, on certain points, ahead of the University of Montreal, and especially of Laval, which is lagging, for example, in the percentage of doctoral students in the human sciences and in the number of PhDs awarded each year. This is because the major anglophone institutions have a three- to five-year lead in the establishment of programs. If current trends continue, the University of Montreal may catch up a few years hence. All Laval needs is a good impetus to regain its forward movement.

Francophone universities are not as far behind other Canadian universities in the human sciences as they are in the natural sciences and, particularly, in the health sciences. There is more cause for alarm in this latter field, since Quebec's major anglophone institution, McGill University, is first-ranked in Canada with the University of Toronto. It is not part of our mandate to judge this question. However, a first-rate centre in the health sciences must be established in a francophone university in Montreal, Sherbrooke or Quebec. This centre should not hinder McGill, which has wisely and extensively invested in this sector, relinquishing supremacy in the human sciences to francophone universities.

In the human sciences, the universities of Laval and Montreal are ranked first in Quebec and are among the best in Canada in most disciplines. There is no reason for concern about them since they have very special responsibilities to the Francophones in Canada, and they depend on funding agencies to give them

particular attention for the development of graduate studies in the human sciences. However, in spite of their apparent good health, francophone universities in Canada face an uncertain future.

Those for whom this report is first intended - government authorities and universities - are very much aware of the conditions encountered by all the francophone economic, social, cultural and political organizations in Canada as a result of the language and culture of their members. We will limit ourselves here to describing some of the tasks that francophone universities must always perform because of their French nature.¹

1. A Feeling of Discrimination

Many Francophones experience a strong feeling of discrimination in their dealings with federal research granting bodies. To what can this be attributed?

The anglophone members of the various work groups and committees of the Canada Council, the Social Science Federation of Canada (formerly Social Science Research Council of Canada) and the Canadian Federation for the Humanities (formerly Humanities Research Council of Canada), learned societies and federal research bodies and laboratories have discovered that francophone specialists in the human sciences, especially the social sciences, approach their discipline in a different manner than Anglophones do. We are in the presence of two scientific philosophies and practices. In some cases, the styles are as divergent as the Marxist and functionalist approaches.

The consequences of this are so extensive that specific disciplines have almost been founded in French Quebec; for instance, sociology has made more rapid strides there than in the rest of Canada, and even the most receptive and best informed Anglophones have difficulty in understanding and accepting its particular development.

Quebec teachers and students are aware of this fundamental divergence and fear that their requests for research grants or fellowships from federal bodies will be refused merely because the selection committees use criteria that are foreign to their scientific approach. They do not question the competence or objectivity of the members of these committees but deplore that the latter are usually Anglophones who are guided by the criteria of another culture and tradition. Those who have sat on these committees, both Anglophones and Francophones,

know how anxious the members are to be equitable toward Francophones. However, even the closest attention does not provide a perfect guarantee. Those whose requests have not been approved are sometimes inclined to blame this on cultural factors that work against them. Thus, in spite of the high level of approved requests from francophone researchers and students, at least at the Canada Council, the latter have more negative feelings than Anglophones toward federal bodies providing fellowships and research grants.

Though francophone academics in Canada are somewhat influenced by scientific concepts from France, this is not sufficient to explain the difference in scientific styles. The same differential indicators have also been noted among those who have studied at American, English or English Canadian universities. It is the social and cultural environment of Quebec itself which best accounts for a specific francophone style in North America. This view is shared by the task force of the University of Montreal:

Mission-oriented and applied research necessary for the management and control of a society and its conflicts of interests illustrate, and the Quebec situation is no exception here, how much the development of some university disciplines and particularly their academic activities must take into account such social incentives. But these are not the only ways by which the growth of a university discipline is affected. The relations between a disciplinary field and the social structure have numerous modalities which include, in addition to funded research, the activities of university specialists fulfilling various functions outside the scientific field. The impact of these relations on research activities and on the development and recognition of a discipline varies, as can be seen by the characteristic evolution of certain specialties in the sector of the humanities and social sciences... The rapid growth of the social sciences in Quebec during the last decade was spurred by important modifications in the provincial bureaucracy as well as by the latter's extended functions resulting from economic changes. These disciplines acquire a major significance as "social technologies" that enable the modernization of the public administration, the rationalization of growth and the achievement of various social reforms... Such a situation influences the choice of research themes and makes it difficult to form research teams, to keep them together for long-term work, to effectively manage the training of new researchers and to increase the distribution of research findings... However, some observers have noted a shift recently from social commitment to a "value-free" approach which they relate to the fact that social science disciplines have acquired greater autonomy and are less bound by external demands and constraints. In the case of sociology, this evolution has been accompanied with an attempt to "nationalize" the sociological field in Quebec through a professional organization and means of exchange and distribution aimed at "a more complete monopoly over a given field of study: the Quebec society"... These few aspects of the evolution of research in some of the disciplines of the humanities and social sciences are indicators of the

relations between the scientific field and other fields (political, economic,...) of Quebec's social structure. The development of research, especially in the social sciences, has been advanced by the objectives of modernization and rationalization of the social structure pursued by the classes and groups that seek to consolidate and control the institutional power of Quebec and that count on increasing social participation around the problems of development and on reinforcing the public sector of the Quebec economy. As we have already pointed out, these disciplines have thus benefited from the growth of "social technology" that surrounds and supports the specific functions assumed by the government of Quebec; this has occurred in a situation of economic dependency that provides very little incentive for the development of a scientific activity that is clearly related to industrial production.²

Whether we take for comparison the number of graduate students or the number of Francophones among the Canadian population, francophone universities receive in quantitative terms an equitable proportion of the federal research funds in the human sciences. We have also ascertained that the Quebec government's share of research funds in this sector benefits francophone universities extensively, thereby tipping the overall balance in the latter's favor. Yet the francophone universities of Quebec have the very clear impression of being disadvantaged in relation to anglophone universities.

This apparent contradiction between factual data and feelings cannot be resolved through purely individual measures. Whatever their extent, reforms alone cannot adequately modify the perception of most francophone academics who consider that federal granting bodies - including but to a lesser degree the Canada Council - act and think in "English."

It is not a question of individuals but of a society.

Quebec's francophone academics and universities constitute an original system. The problem is that this system is immersed in an environment of other systems, all anglophone and closely tied together to the point that they form a powerful operating unit: the "super-system" of the North-American scientific culture. The proximity of the latter creates a relationship of uneven strength. It is therefore essential to protect the francophone system, which is relatively much weaker, so that its members experience a feeling of security in their relations with those of the anglophone super-system.³

The task force of the University of Montreal draws from this situation a conclusion that is widely accepted in Quebec universities:

In this general context, the problem facing Quebec's university system is to successfully manage the various incentives essential for the development of graduate studies and research. Thus, when formulating the general objectives of

graduate studies, the Council of Universities considers "outside representations" as long as these are within its other objectives (transmission of knowledge and development of creativity, training of specialists required by society, advancement of knowledge and training of researchers) and "the latter's realization is not compromised".⁴

2. The Particular Organization of University Research in Quebec

The original and well-developed organization of research in Quebec is a good indication of the determination of Quebec's academics and officials to give themselves an institutional framework that suits their concept of graduate studies and research.

Unlike Ontario, Quebec does not have a separate ministry of university affairs. However, the Ministry of Education has a Higher Education Branch (DIGES) which, during the later years of the Bourassa government, was under a Secretary of State responsible for universities. The Council of Universities (Conseil des universités), a very important advisory body, comes under the Higher Education Branch, as do other services such as the Bureau of Science and Technology and the Science Research Council.

Also reporting to the Higher Education Branch is the Researcher Training and Concerted Action Program (FCAC), which has an annual budget of about \$10,000,000 in free university grants for all sectors.

In spite of its modest budget, this program helps to improve the situation of francophone universities in the natural sciences, the health sciences and especially the human sciences. It pursues four basic objectives: encouraging team research by providing grants only to researchers working as members of a team; helping to train researchers by funding only teams with master's and doctoral students making up at least a third of their members; compensating for insufficient federal funds to francophone universities by favoring the latter and somewhat neglecting anglophone universities, particularly McGill; and giving preference to the University of Quebec over other francophone universities because this university is a public institution and, consequently, receives few research grants from federal research granting bodies. Finally, the FCAC grants additional points to research projects particularly useful for Quebec. These objectives are followed very closely, including the one concerning special assistance to the University of Quebec. In absolute figures, the universities of Laval and Montreal receive much more aid from the government of Quebec than

does the University of Quebec. In relative terms, the University of Quebec exceeds them and the University of Sherbrooke by 60 per cent or more.

The administration of the Researcher Training and Concerted Action Program has greatly improved since its establishment, but its project selection procedures and the definition of its criteria and objectives are open to question. The Council of Universities has undertaken to evaluate its entire program.

Contrary to most of their anglophone colleagues, francophone academics and officials commonly discuss the "planning" of graduate studies as well as "science policy."⁵ They would like an overall policy of graduate studies that would cover two major sectors: the activities of the Council of Universities (this Council is responsible for the general structuralization of the curricula of each major teaching orientation and of research, especially by undertaking "operations", such as those already conducted in the pure sciences, applied sciences and health sciences, as well as for the division of these major orientations among the universities); and the activities of the Researcher Training and Concerted Action Program and the research projects that many government departments and bodies are increasingly contracting with academics.

Those who advocate such a global policy for Quebec encounter three main obstacles.

First, Quebec's universities and academics continue to depend to a certain extent on research grants from the federal government. This dependency is certainly less in the human sciences than in the natural and health sciences. However, since it is difficult to design a science policy that does not cover all sectors, the latter as a whole must be considered. In order for Quebec's academics and officials to design and implement an integrated science policy, the government of Quebec would have to control federal grants intended for university research in Quebec by applying provincial standards to them.

Second, a single coordinating body in Quebec should be entrusted with all the activities related to graduate studies, including research. These activities are currently the responsibility of the Council of Universities, the FCAC and a host of separate departments, boards and committees. Most people believe that the Department of Education is too huge and tentacular to assume this additional leadership and coordination role. Some think that the Department of Industry and Commerce could take on this responsibility; others prefer the Department

of Cultural Affairs or a body answerable to both these departments. Finally, still others would attach science policy to the Office of the Premier. This task of integrating science policy probably will be given to the Secretary of State for Cultural Development, established by the Parti Québécois.

Third, the proponents of an integrated science policy must contend with the opposition of many people who prefer the individual and liberal approach of federal bodies over the "programming" and intensive "planning" of graduate studies, and more particularly of university research. In addition, the latter are generally against any control by the government of Quebec of federal grants to university research. In their estimation, the maintenance of the autonomy of the federal and provincial sources of university research grants is to the advantage of researchers and universities.

Notwithstanding these and other difficulties, Quebec researchers and officials are determined to establish the institutional foundations of university research on standards and practices that reflect the culture and social environment of Quebec Francophones.

3. The Francophone Scientific System

The existence of a francophone scientific communication system is another example of the determination of academics to have institutional frameworks suited to their profound cultural aspirations. The French-Canadian Association for the Advancement of Sciences (ACFAS) comprises approximately 40 disciplines from all areas, including the human sciences. Affiliated societies are more or less vigorous, but all give their members the opportunity to relate in their mother tongue and according to their cultural characteristics. These learned societies, though few in number, are homogeneous and often are the only organizations to which young scientists belong and in which they feel comfortable. Later, many of these scientists will join Canadian and international scientific societies, but only rarely will they break away from the scientific community of ACFAS.

This communication system is limited and does not provide researchers with all the possible avenues of scientific knowledge. Nonetheless, it is a first stepping stone, and for many disciplines it opens onto the Canadian, American, French and international scientific systems in a variety of ways.

The francophone scientific system in Canada extends to numerous activities,

conferences, periodical publications and journals through which information flows freely and abundantly. These francophone vehicles of scientific thought enable a broad distribution of the best research findings from francophone universities; some of these research findings have attracted international interest. Experienced researchers also publish in the major scientific journals of the Canadian, French and American systems, but most continue to utilize the journals of their immediate system.

Participation in this francophone system of scientific communication, though limited and insufficient, offers concrete benefits to French-Canadian scientists. They become part of a scientific community to which they can relate according to their temperament and aspirations. Moreover, this reduces the high costs of integrating the more extensive and remote scientific systems, which are not as easily accessible.

This determination to have an original science policy and maintain a communication system that facilitates the exchange of certain scientific information does not mean that francophone researchers do not share the same concern for excellence as do their anglophone colleagues. It indicates that they consider that quality can normally be achieved in their particular culture and scientific community. This is a fact they recognize. Francophone researchers and their universities must therefore take up a dual challenge to achieve superior quality: that presented by science itself and that of their contribution to a specific culture and scientific community. The first challenge also concerns anglophone researchers and universities, but the second does not.

The first task is both individual and institutional in nature, whereas the second is collective or social. Throughout this report, we have dwelled mainly on this first task. How can Canadian universities achieve quality in the human sciences? How can teachers at these universities be enabled to take full advantage of the resources of their social environment? Finally, how can this environment be made as conducive as possible for developing scientific knowledge? The considerable disparities among the institutions are due to intra-cultural and intra-social factors: proximity of decision centres on university research; social, local and regional density, etc. An anglophone student or teacher in a less-renowned institution may not achieve the quality of work desired, and this will be regrettable. This obstacle has very little effect, however, in the case

of the anglophone culture and scientific communication system. This student or teacher may overcome the handicap that restricts his personal development by making a greater effort than his more fortunate colleagues to utilize more profitably his scientific communication system or by moving to an institution that is better off. The same argument applies to each of the anglophone regions. Thus, although universities in the Atlantic region do not fully benefit from the scientific system to which they belong, to a certain extent they can compensate for this deficiency by limiting their goal to sectors that meet major regional needs, or they can also make the best of their integration in a well-developed scientific communication system by drawing on useful knowledge at relatively low cost.

In the case of francophone students, teachers and universities, there are inter-cultural and inter-social factors. It is a matter of examining the possibilities of development of a given language, cultural style and scientific system in an environment dominated by another language, cultural style and scientific system. In this latter case, if Francophones are not to be doomed to mediocrity, there must not be any half-measures or excuses: either they integrate directly with the dominant anglophone system or their society provides them with the necessary resources to maintain a system capable of achieving relatively high quality. Therefore, science policy in Quebec is inseparable from a global development policy of Quebec society. The task force of the University of Montreal also perceives this:

Everything occurs as if nationalist growth strategies for a given scientific field must necessarily encourage a more harmonious and adequate expansion of Quebec's scientific output, which is thus protected from dysfunctional and uneven competition or from a competition that is temporarily too great, given the nature of its current development. Hence the importance of a special policy of catching up that comprises certain strategies and ideologies. However, would not these strategies, which are not defined in relation to the whole community but which seek nonetheless to increase the rate of growth and to reduce gaps, be doomed invariably to ineffectiveness due to their lack of overall social significance? Until such strategies are based on real content, on suggested social and political policies with attendant changes in the various agents of research output, on overall political debate within society, will they not run the implicit risk of being influenced by external forces due to their inability to provide a purpose capable of mobilizing people? Beyond catching up, should there not be the overall aim of determining specific and significant social development objectives?⁶

Even in the absence of a development policy systematically established and pursued by the government of Quebec, it is possible to estimate at least

summarily the kind of resources required for the progress of graduate studies in the human sciences and, moreover, to indicate the additional problems resulting from the inadequacy of these resources for francophone students, teachers and universities. These are the questions we will be examining.

4. Deficiencies of the Francophone Scientific Communication System

Canadian Francophones have their own scientific communication system which provides them with numerous advantages. Compared to the anglophone system, however, this system is very small and not as well developed. Nevertheless, its most experienced researchers and best institutions are in constant, close contact with the francophone system of international scientific communication, which is much more extensive as a result of the dynamic participation of France. It should be added that the closeness of this interaction varies with the disciplines; it is greater in the human sciences than in the natural sciences. However, as a result principally of the predominance of the United States in most of the scientific disciplines, this international system is very inferior to the anglophone system.

Since anglophone scientists are in the forefront of international scientific communications, French scientists are in a dependency situation. The need to translate scientific terms is the first problem encountered by francophone scientists. On this point, the Report of the Senate Special Committee on Science Policy states the following:

The state of scientific and technical terminology in the French language is far from being satisfactory today, and is worsening rapidly. In the light of our own experience since 1968 we can assert that this is as true in other countries as in Canada. At the biennial of the French language held in Liège in 1969, it was agreed that French scientific and technical terminology lagged about 5,000 words behind English terminology, that is, 5,000 scientific and technical words in English have no French equivalent; and at the biennial of 1971 in Menton it was announced that the lag in French terminology is increasing at the rate of 1,500 expressions every year.

Two factors are mainly responsible for this growing gap. First, there is a lack of co-ordination of individual and collective efforts in the creation of an adequate French terminology. Secondly, the methods used to develop the terminology are archaic, costly, time-consuming, and confusing...

The lack of terms and the frustration created by confusing reference material often lead authors to create their own terminology without consultation, which makes communication almost impossible. It has been estimated that terminological research for the translation of one page of scientific or technical texts takes an average of one hour (about fifteen minutes for every expression, and there

are typically four unknown expressions requiring research to a page). What is worse, translators at work on English texts containing terms that do not exist in French are, like authors, tempted to invent expressions; this often makes the translation itself incomprehensible.⁷

The fact that members of the francophone scientific system must find equivalents for a large number of terms drawn from the anglophone system already creates a considerable handicap for them. They are constantly caught in a serious dilemma: either they completely translate the important English works of the various disciplines, and their own system may therefore fall several years behind the scientific development of the other system; or they immediately read these works in their original language and then risk acculturation at some time in the early future. Canadian Francophones often have this unfortunate experience: in terms of the scientific culture, many of them have become Anglophones. A good portion of the francophone scientific community in Canada is made up of expedient "translators" or unconsciously assimilated Francophones.

A considerable obstacle in its own right, the need to translate is but the consequence of the chronic state of inferiority of the members of the francophone scientific system. It is stated that 90 per cent of the scientists ever known to humanity are alive today and that 90 per cent of them are in the United States. This is an overstatement. Nonetheless, English is today the lingua franca of science. If there are throughout the world so many scientists whose mother tongue is not English but who publish in English, it is because they feel they will be assured a more direct and rapid distribution by using this linguistic medium. In short, the need to translate in the francophone system is the result of an extremely important fact: the greater output of the anglophone scientific system.

This phenomenon occurs in all the natural sciences, but we are unaware of the degree to which it extends to the human sciences. Undoubtedly, it does not affect large sectors of the humanities as much as it does the principal social sciences. Even among the latter, it probably touches certain disciplines more than others, for example, economics more than sociology. Nonetheless, one has only to consider the difficulties that teachers of the human sciences have in finding French language publications for their undergraduate courses to realize how acute the problem is. In 1975-76, a committee was formed at Laval University to assess the language of books, works of reference and publications. It found

that very often over 70 per cent of the publications used were English.

The small francophone scientific system has other consequences that raise the personal costs of its participating members and the collective costs of the society that must maintain it. Since the francophone system is not assured of means equivalent to those of the anglophone system, it is very difficult to achieve the same quality. Considerably more funds would be required than are currently received.

We are aware of the extent of the anglophone scientific system whose basic roots are in the United States, the most developed country in the world in the scientific and technological fields. The expansion of graduate studies in Canadian universities during the last 15 years, in the human sciences as in the other fields of knowledge, has been helped considerably by the close connection of the anglophone scientific system in Canada to the American system. There have certainly been tensions and failures, but even Canadian nationalists among university teachers and administrators agree that if English Canadian universities had not tapped the huge reservoir of the United States (teachers, students, scientific books, university teaching technologies), the development of graduate instruction and research would have been considerably slower. In any case, in view of the cultural affinities and the geographic proximity of the two interacting systems, it would have been impossible even by design to prevent the resources of the American system from reaching the Canadian system.

Already more limited than the anglophone system, the francophone system in Canada does not have within its grasp a rich system of similar scientific culture from which it can draw what it requires. The system in France, culturally and geographically distant, does not have a large surplus of resources that could benefit at low cost Canada's francophone universities. The latter undoubtedly have a certain number of teachers and students from French countries such as Africa, Vietnam and the West Indies. There are no specific data as to their number or qualifications, but proportionally there are probably not as many as there are from the United Kingdom and the British Commonwealth in the major English Canadian universities. However, if McGill is able to maintain the status of a great university, it is because it can make up the now inadequate supply from the United Kingdom and British Commonwealth by drawing on the abundant resources of the United States. Francophone academics and officials of Quebec's

Department of Education criticize McGill for this. They wonder whether funds should be given to this university, a portion of whose graduate students come from outside Quebec and who will return to their places of origin following their studies. If francophone universities had a similar proportion of foreign teachers and especially students, their animosity would diminish.⁸ For example, they would summon more the following argument: the many competent foreign teachers and students in our universities raise the level of graduate studies to the greater benefit of our native teachers and students.

Until recently, teacher recruitment for francophone universities was conducted mainly in Canada, probably on a wider scale in the human sciences than in the natural sciences. This inbreeding caused major drawbacks, the principal being the creation of an inertia factor. Therefore, in view of the influx of undergraduate students and the growth of graduate studies over the last few years, francophone universities have sought to recruit teachers from outside the Canadian francophone system. Some of these teachers are attracted to Canada because they are not needed in the international francophone system, but they are inadequate in number. Canadian universities draw upon the Canadian anglophone and international systems, especially the American one. All that is required of teachers interested in joining the francophone system is that they be Francophones or at least ready to learn French rapidly. This action is too recent to determine whether the requirement for anglophone teachers to learn French will have an effect on the quality of resources developed in this way. As employment opportunities in the anglophone universities of the world decline for teachers of the anglophone system, francophone universities are better able to appoint teachers. But this trend is already being criticized. Good Canadian francophone graduates are being trained in increasing numbers. In the next few years, these graduates will return to their alma mater to seek employment, but they may find the opportunities are nil in view of the current recruitment of teachers from French countries and especially from the anglophone system. Their recriminations will be to no avail, and their only options will be to change their career plan or seek employment in the international francophone system or in the anglophone system. We can assume that the latter in particular will be accessible to them as long as they are few in number.

Each Canadian anglophone university seems to be looking for a few Canadian

francophone teachers. Furthermore, the development of Quebec studies in many disciplines justifies this desire for "exotic studies." This relative ease of access to the other system makes francophone teachers pay a price - acculturation to English.

A major weakness of francophone universities in Canada is their difficulty in recruiting good graduate students in the human sciences. Many Canadian francophone students, especially at the doctoral level, leave their original university and enrol in French, American and, more recently, English Canadian universities. Francophone Quebec universities recruit few students from other universities, their own system or other systems. The resultant scarcity of good students is one of the main obstacles to development of graduate studies in the human sciences.

Another weakness of the francophone scientific system in Canada is the lack of development of the university research libraries. The superiority of the University of Montreal library is very relative and, given its currently weak development, we must conclude that, far from coming closer to being a quality research library in a number of disciplines, it is moving further away from this. In regard to the Laval University library, it was implicitly decided a few years ago to make it simply a library service for the basic requirements of undergraduate studies. The very meager funds allocated to the library by the Laval University council over the last 10 years have given poor results.

Francophone university libraries in Canada face an additional constraint, namely that of purchasing publications from both the anglophone and francophone systems. The libraries of Canadian anglophone universities, even that of the University of Toronto, purchase very few French publications, since there is little demand from their users. Francophone university libraries are not in a position to adopt the same attitude toward English-language publications. The latter are much more important than French-language books in many disciplines as far as francophone teachers and students are concerned. In addition to the cultural dependency of francophone academics, there are the additional costs to the universities. Since they lack special funds, the libraries of francophone universities are unable to assume these costs, and this explains to a large extent their extreme paucity.

5. Serious Effects Heightened by the Common Problems Facing All Canadian Universities

In addition to their difficulty in integrating a sui generis scientific communication system, Canadian francophone universities encounter the same handicaps as other Canadian universities: limitation of growth at the graduate level, since priorities are generally determined in relation to undergraduate studies; devaluation of research efforts that are loosely connected to teaching programs; institutional indifference if not hostility toward graduate studies and multi-disciplinary, even multiuniversity, research as a result of the monodisciplinary and undergraduate orientation of the department, and of the shortage of resources at each university, especially at the doctoral level; and long delays in implementing new master's and doctoral programs because of interdepartmental rivalries, hesitations and often the incompetence of university study committees and of the Council of Universities.⁹

These common problems facing all Canadian universities often have an added dimension in Quebec's francophone universities as a result of their immersion in a different social environment. Thus, student demands tend to be more "political." Similarly, the involvement of unions at the faculty level, a relatively new element in Canadian universities, is more pronounced than in anglophone universities. In the latter, teacher unions are almost exclusively concerned with protecting the professional interests of their members; in Quebec, on the other hand, they insist on their right to have a new administrative and educational conception of the university.

Student-faculty discussions in departmental meetings are more ideological in the francophone than in the anglophone institutions. It would be easy to determine the reasons for these differences in orientation and style, given the cultural and social context of Quebec.

Quebec's universities have arrived at a crossroads, as have the other universities in Canada, though in a different way. Following the undergraduate student population explosion and the enormous growth in the number of teachers, there will now be a relative stabilization in which the emphasis will have to be placed on restructuring the university organization as a whole. Quebec's Minister of Education, Jacques-Yvan Morin, announced in early January 1977 the coming establishment of a major commission of inquiry into the organization

and purposes of the University of Quebec. It seems taken for granted that this commission will have as its first mandate the assessment of graduate studies and university research.

6. Two Sources of Vitality: The Exceptional Contribution of Great Academics and the Consolidation of the Institutional Foundation of Science

Though inferior on many counts, Quebec's francophone universities display a great deal of vitality. The actual awareness of the enormous problems that need to be overcome certainly stimulates those who work in these universities. One question arises however. For how long can the development of graduate studies and research in the human sciences still depend exclusively on the untiring efforts of a handful of authentic scientists? Will not their development be ensured in the future mainly through solidly established institutional structures, as has long been the case elsewhere?

What is striking at first glance when considering the francophone university setting of some 25 or 40 years ago is the presence of great academics. Estras Minville, Edouard Montpetit, Father Georges-Henri Lévesque, Adrien Pouliot, Cyrias Ouellet, to name but a few of the older personalities, shared a common goal: to involve society in their creative work. Beyond acquiring knowledge for themselves, these admirable men felt a responsibility toward society. Their intellectual work was inseparable from their desire to help Quebec society as a whole to acquire the critical cultural dimension of science which is original in our modern world. These men gave unsparingly of themselves throughout their entire working lives in scientific organizations and commissions of inquiry in order that their own cultural community would be equipped with maximum resources to further the advancement of knowledge and the growth of francophone universities. By so doing, they may have prevented themselves from reaching the pinnacle of science for which they were destined in view of their exceptional intelligence and energy; on the other hand, their highly humanitarian behavior was undoubtedly edifying to all who met them.

There are still such men today in Quebec's universities. The development of the university and its various scientific disciplines in the human and natural sciences continues to depend on a small number of individuals. Today, as yesterday, the responsibility lies with this elite to have their respective disciplines incorporated in the programs of their own university and introduced in a society

which up to the last few years tended to ignore scientific values.

These individuals are not disciples of any particular master, nor are they anchored in tradition. They are considered in the university as "course developers": their curriculum vitae states that they have given, and thus prepared, from 10 to 20 courses on the most varied subjects. Groups and individuals from all quarters urge them to engage in the major debates concerning the collective choices of a changing society. And yet, in spite of their heavy responsibilities, these same academics are highly considered by their colleagues in the country's anglophone universities and research centres. Their participation in the activities of their learned societies and their involvement in the scientific system in their field of endeavor are considered essential. But it is mainly as a result of the quality and output of their research and their publications that they are recognized in Canada and in other countries.

However, the dimensions of modern scientific culture and institutions, like the university, that constitute its supports are now such that it would be illusory to rely above all on the actions of a few courageous precursors.

The evolution of the situation of Quebec will inevitably lead to the disappearance of this breed of men. The vitality of the scientific culture and of francophone universities now depends on them only secondarily.

Fortunately, a second process now underway will provide new, more solid foundations for the advancement of graduate studies and scientific research in Quebec. We refer here to the remarkable young generation of teachers and researchers; better trained and more rigorous than their elders, their only goal is excellence in their respective disciplines. As indicated by the enormous increase in the research funds of francophone universities in the last 10 years, this new generation of scientists and humanists intends to prove itself mainly by the output and quality of its research. They have the unqualified approval and cooperation of those among their elders who have achieved recognition in the scientific community against all odds.

Thus, scientific culture has attained maturity in French Quebec. From now on, Quebec's francophone scientists and humanists will not have to struggle individually, as their elders did, in foreign countries, in Canada and in Quebec itself to achieve recognition for Quebec society in the international scientific culture. One of the outstanding facts of the recent evolution is that

Quebec society is learning to value its scientists. With good reason, the latter are being recognized in the Canadian and international scientific communities.

Like their predecessors, francophone teachers and universities strive after quality, but they pursue it differently. Brilliant, individual efforts have been replaced by a standard of the best possible institutional support for science and researchers. This is a healthy change, since it guarantees to the francophone scientific culture in Canada development conditions equivalent to those the anglophone scientific culture has had for a long time. At the same time, this change raises new problems.

7. Recommendation

The integration of francophone universities and their teachers into a specific scientific communication system is not an arbitrary choice which they could forego in the foreseeable future. This integration results from their belonging to an original society that is distinct from that of the anglophone universities, and it constitutes a unique cultural contribution to the entire North American continent.

These teachers and universities seek to grow according to the specific characteristics of the great French humanistic and scientific culture, with some adjustments in view of their particular situation. In so doing, they bring to Canada and the whole of the North American continent an added cultural dimension that must be preserved and strengthened.

In the field of the human sciences, francophone teachers and universities perform well in relation to their anglophone counterparts. If it were only a matter of maintaining individual equality, there would be no cause for concern. One could rely with some confidence on open competition.

It is rather a question of preserving and favoring the development of a particular scientific system. As we have seen, this francophone system is smaller and not as well off as its anglophone counterpart. Its individuals and institutions must work harder to achieve similar results. Individual measures are inadequate. The system as a whole must be strengthened by improving its channels of communication.

Our francophone colleagues were unanimous in recognizing the primary and

inalienable responsibility of the Quebec government in formulating and implementing a policy on graduate studies adapted to the francophone scientific communication system. On many occasions in this report we have concurred with the general statements made in the report on university research objectives submitted to the Council of Universities.

We also essentially agree with the proposals that recognize and emphasize Quebec's originality. We concur, finally, on this point with the task force of the University of Montreal, which supports the following statement from the brief submitted in 1972 by the University of Montreal to the Council of Universities:

A major principle should direct relations between the federal government and Quebec, namely the latter's responsibility toward the Quebec scientific community in Canada. The carrying out of this responsibility implies an adequate understanding of the social, mental and intellectual conditions that lead to the scientific output of a given society. It must be recognized that all of these factors related to the social structures of knowledge are extensively shaped by the culture of a society in the total sense of the word. Thus, the types of ideas being developed in scientific work are fostered firstly by the language of a society. In this sense, though intellectual and scientific output extend beyond national boundaries, they are tied to a large extent to the cultural background of researchers. The government of Quebec must ensure, therefore, that Canadian scientific planning takes into account these cultural and linguistic realities which affect Quebec's scientific output.¹⁰

The victory of the Parti Québécois in the November 15, 1976 provincial elections will no doubt lead to new, dynamic relations between the Canadian and Quebec governments. In its relations with Quebec's universities and its teachers concerned with scientific research, the federal government will need to take into account Quebec's originality more than it has in the past. It must take a fresh look at the relations between research and teaching in graduate studies and, more generally, at the definition of "science policy" by Quebec's academics and officials.

Given the current state of affairs, the Canadian government has a clear responsibility in this attempt to rectify the situation vis-à-vis the francophone system. In every aspect, including that of the humanistic and scientific culture, the French fact represents an essential part of the common good which the Canadian government must promote. We recommend that an amount arbitrarily set at 10 per cent be added to all federal government expenditures for free and mission-oriented research in the francophone scientific system. These additional

funds could be provided directly to universities receiving research grants or indirectly through the government of Quebec as per agreements between the two governments.¹¹

Notes

1. As stated before, our comments apply only to the French-language universities of the Province of Quebec. Means and time limits do not allow us to deal with the University of Moncton in the Atlantic Provinces and the University of Ottawa and Laurentian University in Ontario.
2. Report of the Task Force, University of Montreal, pp. 260-270.
3. See G.S. Blume, M.J. Chartier, The Effects of Biculturalism on Science in Canada (Institut d'histoire et de sociopolitique des sciences, University of Montreal, 1974); M. Fournier, L. Maheu, Champ scientifique, positions sociales des intellectuels et société dépendante (Sociology Department, University of Montreal, 1974); Recherches sociographiques, La situation de la recherche sur le Canada français, vol. III, nos. 1-2, 1962; L. Beaudoin, La recherche au Canada français (University of Montreal Press, 1968); M. Fournier, "L'institutionnalisation des sciences sociales au Québec," Sociologie et sociétés, vol. V, no. 1, (1973); et Recherches sociographiques, La sociologie québécoise contemporaine, vol. XV, nos 2-3, 1974.
4. Report of the Task Force, University of Montreal, p. 270.
5. See especially the study carried out by a committee of the Council of Universities, Objectifs de la recherche universitaire (Goals of University Research), 1974, and the comments made on this study by administrators in all Quebec universities.
6. Report of the Task Force, University of Montreal, pp. 213-214.
7. Report of the Senate Special Committee on Science Policy, A Science Policy for Canada, vol. 3, pp. 757-758.
8. We have seen that the proportion of professors and students from outside Quebec is greater in the English-language universities than in the French-language universities. The number of French-speaking professors and students at McGill should be considered separately. We do not know the exact number and percentage, but there is reason to believe they are quite high and increasing constantly. We estimate the current percentage to be between 10 and 20 per cent and even higher in certain fields. McGill remains clearly an English-speaking institution and its presence is good for Quebec. Some factors, for example, the small contribution of the Quebec Government to McGill's research fund seem to indicate that the low level of integration of this institution into Quebec's education system does not rest solely with the university. However, in some of the human sciences, the French-speaking element at McGill is strong enough to be considered integrated, at least partially, into the Francophone communication network. An in-depth study of this question would be useful.

9. It takes up to three years to start a new program of study in the Quebec universities and the chances of blockage along the way are great. See the Report of the Task Force, University of Montreal, p. 131 et seq.
10. Quoted in the Report of the Task Force, University of Montreal, pp. 208-209.
11. Our recommendation also applies to all French-speaking universities in Canada, whether or not officially bilingual.

SECTION FOUR

Recommendations

INTRODUCTION

Graduate studies in Canada have been radically transformed since the 1950s. This revolution can be attributed largely to recognition of the role of science in an industrial society. Federal and provincial governments turned to universities to train the scientists and to conduct much of the research which society needed. Statistical evidence for this revolution can be seen in almost every aspect of graduate training: in the 1960s graduate enrolment quintupled, operating costs for universities increased by a factor of six, and university expenditures for research appear to have multiplied at a comparable rate. The expansion of graduate training and research was so sudden and dramatic that long-range planning was extremely difficult. For university and government administrators the immediate responsibility was to provide buildings, faculty, programs and money for students who were already seeking admission.

It was not an orderly process. People seemed to be planning, but the rate of expansion was so great and unprecedented that plans constantly had to be changed or set aside, and ad hoc decisions became the rule rather than the exception. Amid this confusion the money and the personnel were found, and the universities managed to construct the buildings, to provide the programs and to maintain high levels of scholarship and research.

Now that the period of rapid growth has ended, it is possible to assess the cumulative impact of the many ad hoc decisions and to discern underlying trends and patterns. Canadian universities have been transformed internally and in their relations with other institutions. The universities of only 10 years ago are part of the past and so is the society that they served. We may regret some of the changes but we cannot turn back the clock. Our concern must be with contemporary pressures and demands on graduate studies, and our view of what now needs to be done must begin with the trends and patterns which have emerged.

Any attempt to isolate the major developments runs the risk of oversimplification. In an institution as complex as a university there is a web of relationships, and a tug on any part of the web will be felt everywhere. New developments will produce strain, but the source of change may not be

easily located or measured because other parts of the university adjust to establish a new equilibrium.

There have been two major developments which, in our opinion, have had a formative influence on graduate studies in Canada in recent years and which will continue to exert a significant influence in the future. One is the increasing importance Canadians have given to research, and the many changes within the university which this growing emphasis has brought. The other is the gradual integration of universities into provincial systems of post-secondary education, and the major consequences of this on the relations between universities and governments.

Neither of these developments is new or startling. The interest in research goes back to the nineteenth century. University research, however, was traditionally seen as an adjunct of teaching and only recently has it been recognized as a separate and legitimate activity even if it makes no direct contribution to teaching. Similarly, although many Canadian universities began as provincial institutions, only recently have provincial governments stressed post-secondary education and attempted to integrate universities and other post-secondary institutions into a coordinated system of provincial education.

We offer a summary of what we believe to be the major implications of these developments and what measures should be taken for universities to fulfil their research function and to participate in provincial educational systems while continuing to play their traditional roles. Canadian universities must continue to be major repositories of knowledge, continue to teach and continue to contribute to society by social analysis, social criticism and social action. There is danger that the major developments we have noted will interfere with their traditional responsibilities. Our comments and recommendations have a twofold objective: to enable graduate studies to adjust to major new developments and universities to pursue their traditional aims.

Our recommendations are thus an extension of our analysis of the trends in graduate studies and the objectives of graduate training and research. Our attention was focused on the future role of the federal government and, more specifically, of the new Social Sciences and Humanities Research Council.

Changes at those levels imply changes at the provincial and university levels, and we could not avoid proposals and recommendations for all institutions related to graduate training and university research. It would have been presumptuous to suggest detailed changes or reforms in individual universities and provincial agencies without a closer acquaintance with these institutions. Our recommendations are not presented as blueprints but as a guide to the kinds of changes affecting all levels of graduate training and research which our studies have convinced us are imperative.

1. The Increasing Importance of Research at Canadian Universities

Canadian universities should continue to accept the responsibility for conducting research. We have discussed the links between research and teaching and our conviction is that good graduate teaching depends on professors and students being involved in research. Canadian universities have been dynamic institutions over the last 15 years, a quality linked to some degree with expanding enrolment. Over the next decade enrolment is likely to level off at anglophone universities, and expansion at francophone universities is likely to slow down. If Canadian universities are to avoid the stultifying dullness of established patterns, they must look to research for the variety and dynamism that they need. Universities can contribute to Canadian society by conducting research but they, too, can benefit from the activity.

The increasing importance of research at Canadian universities has already created problems. Many established patterns in universities, especially in the humanities and social sciences, developed when teaching was considered the primary role of professors and when research was seen as a supplementary activity or as a contribution to teaching.

Now that research is encouraged as an end in itself or as a contribution to knowledge which may have no apparent connection with a professor's teaching, it is no longer easy to determine priorities. How does a professor decide how much time to devote to teaching and how much to research? Is his decision biased by the possibility of supplementing his regular salary by acting as a consultant or by doing contract research? Who can protect the legitimate interests of a university department or of students if a professor stresses research at the expense of his teaching?

The recognition of research as constructive activity has other serious implications for Canadian universities. University research involves indirect as well as direct costs. University administrations, under constant pressure to reduce their expenses, have sound financial reasons for preferring research contracts or research grants which defray both costs. These contracts or grants are likely to be commissioned projects in which the research objectives are defined to some extent by the sponsor. Research projects initiated and designed by a professor are more likely to contribute to other university objectives, by contributing to teaching, to the training of graduate students, to the expansion of knowledge or to social analysis, but these projects are more likely to be a financial burden to the university. Even if the professor receives a research grant from an agency such as the Canada Council, his university will still have to pay the indirect costs. There are sound academic reasons for universities to encourage faculty members to do independent research, but there are strong financial incentives to encourage commissioned research.

2. The Consolidation of Provincial or Regional Systems of Post-Secondary Education

Canadians have been slow to recognize the integration of universities into provincial systems of post-secondary education. Even before the 1960s the possibility of political control existed because all universities depended on provincial funds. However, as long as they remained relatively inexpensive institutions serving a small student body they attracted little attention. As J. A. Corry put it, they remained "essentially private enterprises in the form of their organization and in their ways of thinking and acting".¹ University autonomy was a principle extolled by professors and politicians alike, a long-standing tradition that universities must be exempt from political interference if they were to fulfil their academic function. Any political intervention was seen as a threat to academic freedom.

In the 1960s provincial governments became directly involved in the planning and provision of university services. At first, as one study of higher education expressed it, "the harsh reality of government control was obscured by the legal fiction of institutionalized autonomy".² The emphasis

was on expansion, the universities were encouraged to enrol more students and to increase their offerings. Universities competed for students and funds, but the rivalry seemed constructive because it accelerated the expansion of post-secondary training. The costs of duplication or overexpansion seemed less serious than the risk of doing too little. Even in those years it was obvious that not all universities could offer a full range of programs, especially at the graduate level, but provincial governments were reluctant to challenge the traditional autonomy or interfere directly in university administration. The major constraint on expansion was the commitment of the universities themselves to established standards of scholarship.

The shift came when governments no longer gave a high priority to university expansion. Universities were seen as expensive institutions competing with other social services for public funds. The individual universities which had responded so quickly to the pressures to expand proved less able to respond to pressures for coordination and consolidation. They found it difficult to limit enrolment or to eliminate the duplication of graduate programs within a province. In a remarkably short space of time, provincial governments put aside long-standing inhibitions and began intervening directly in the planning and provision of university services within the province. Academics may advise, and their advice may be heeded, but the "harsh reality" of government control is no longer obscured. Universities are expected to serve the public interest, and provincial governments claim the ultimate right to define the public interest.

The trend in the last few years is unmistakable. Today one of the distinctive features of post-secondary education in Canada is the integration of individual universities into provincial or regional systems. This transformation is all the more remarkable because we are dealing with 10 provinces. In each province the historical pattern and the provincial concerns are different, yet in each case the broad outlines are much the same. Each provincial government has increased its university grants, encouraged the expansion of established institutions and the founding of new ones. Each government has now established guidelines for capital and for operating grants which are intended to channel or control this expansion. The provincial authority has not been imposed abruptly. Governments were initially urged by academics to move more quickly, and even in the period of

consolidation they have sought the advice of academics. In every province over the last decade, Royal Commissions or less formal bodies have been appointed to investigate higher education and to make recommendations. In many cases a special advisory committee of academics has been appointed to assist the government in its planning. These precautions, however, cannot obscure the fact that, in each province, university autonomy has been narrowed and the universities are being integrated into a provincial system. In Saskatchewan, for example, the Royal Commission on University Organization and Structure reported in 1974 in favor of two independent and autonomous universities in the province, but it went on to make the point that the over-riding principle was "the concept of university education in Saskatchewan as being a unified, province-wide undertaking".³ This assumption underlies almost every provincial study of higher education over the last decade.⁴ It is also notable that today every provincial department of education has a special division for university affairs or, in some provinces, a special ministry to deal with education at the post-secondary level. In spite of the vast differences between provinces, the trend toward an integrated provincial system of universities, planned and directed by the government, is common to them all.

One aspect of this trend is the declining involvement of the federal government in higher education. The federal government played a major role during the years of expansion. It provided per capita grants to universities, it provided graduate fellowships and research funds through its research councils and it funded a large program of student loans. The government of Quebec did object to the grants to universities, but generally the provinces offered little resistance to these federal initiatives despite their constitutional responsibility for education. The shift to provincial control can be seen in the Federal-Provincial Fiscal Arrangements Act of 1967. Under this agreement, the provincial governments were directly responsible for expenditures on post-secondary education, and Ottawa then reimbursed them for half of these costs. This evolution was carried one step further by the Established Programs Financing Act of 1977 which increased provincial revenues but did not tie these additional funds directly to post-secondary education. This has eliminated the federal grant-in-aid to post-secondary education and has left to provincial governments full responsibility for university funding.

Graduate studies have been directly affected by the integration of universities into provincial systems. Graduate programs are costly, especially at the doctoral level; in every province there are now provincial regulations governing the introduction of new programs, and in most provinces efforts are being made to coordinate graduate training within the province by reducing the number of existing programs. The objective is a coherent pattern of graduate studies within the province.

University research is less affected than graduate training by these provincial systems. The federal government is a major sponsor of research, much of it carried out in Canadian universities. At the same time the federal research councils are still the main sources of funds for free research. The links between university teaching and university research, however, ensure that the emerging pattern of planning graduate training at the provincial level will have a growing impact on university research. There is recognition that the indirect costs of research are substantial and that grants from the federal research councils affect the allocation of university funds. Planning at the provincial or regional level will lead almost inevitably to the exercise of greater control over the research activities and the teaching activities at universities.

This trend toward provincially coordinated universities is unmistakable. Individual universities cannot develop the necessary programs and services, and there must be overall planning authority. A single system, incorporating all Canadian universities to reflect geographic, economic and cultural diversity, would be too cumbersome and complex. Provincial boundaries do not represent ideal boundaries for systems of higher education and, in the Maritimes, an interprovincial pattern is being evolved. Provinces are not the ideal size, but they include enough territory to make viable systems possible; the political and administrative structures already exist, and the constitutional authority is there. A system of provincial coordination seems inevitable and desirable.

The development of university planning at a provincial or regional level has implications which should not be overlooked, for a provincial system entails restriction on the autonomy of the individual university. Many procedures and regulations will have to be standardized because academic standards must be comparable. A rigid, authoritarian bureaucracy could

frustrate the enthusiasm of teachers and scholars, smother local initiative and reward passivity rather than intellectual commitment. While academic standards and costs must be comparable, they need not be uniform. A regulated university system could encourage diversity. There is a danger that public control could lead to political intervention. Universities and faculty members could be penalized for holding unpopular opinions or criticizing government policies, inhibiting free inquiry and open discussion. Safeguards will be needed to prevent that from happening.

We do not believe that we can avoid these risks by denying reality. University autonomy is not the answer. As long as universities are financed by public funds they must be subject to some degree of public control. Provincial governments already make many of the major decisions affecting universities, ranging from what buildings can be constructed to what programs should be offered. The answer is to accept these provincial systems and to try to shape them to minimize bureaucratic rigidities and to ensure that financial accountability does not encroach on the intellectual independence of teachers and scholars.

There is another risk involved in the establishment of provincial systems. If universities are organized in a number of separate systems and are primarily responsible to provincial authorities, they may well become provincial in the intellectual as well as the administrative sense. If the faculty focuses on topics of local or provincial concern, it may be at the expense of sound scholarship: no study of Prairie settlement would be adequate without a knowledge of technology; no scholarly studies of Montreal or Toronto would be possible without the broader context of urban studies.. There are also specific federal concerns which provincial systems might ignore. The Canadian contribution to international development may include graduate training at Canadian universities for students from underdeveloped countries, but provincial systems may not want to admit foreign students. Even interprovincial mobility could be hampered; every provincial government will be reluctant to finance the training of graduate students who intend to take their talents and skills elsewhere after graduation. There are also some graduate programs too specialized or too expensive for any single provincial system, but which might be justified in Canadian terms by the

number of interested students and by the social need. Again, however, we do not believe these risks make provincial systems unacceptable. Provincial authorities can and will be receptive to convincing arguments for the federal concern because it will be to their benefit, and provincial university systems can collaborate at an interprovincial or Canadian level. There is a risk of parochialism or provincialism, but the best safeguard against that is not to deny or to challenge the emergence of provincial systems but to suggest ways of fostering cooperation and collaboration between them.

3. The Changing Pattern of Employment Opportunities for PhDs

We have identified the emergence of research as a university activity in its own right, and the emergence of provincial or regional systems of post-secondary education as the two most significant developments in recent years for graduate studies in Canada. Other observers would add a third development - the apparent overproduction of PhDs in many fields. In the past most PhD candidates, especially in the humanities and social sciences, hoped to become university teachers. Many PhDs were graduated in the 1960s, but university expansion more than kept pace with production and most of the graduates found university posts. The anglophone situation changed dramatically with the levelling-off of undergraduate enrolment. No new faculty positions were created and few vacancies resulted from retirement. The expanded enrolment in doctoral programs of a few years ago is now increasing the supply at a time when demand is contracting. Over the next five years, according to a recent estimate, there will be some 3,705 Canadian PhDs in the humanities and social sciences looking for university employment and only 2,255 university appointments.⁵

Estimates of future supply or demand must be used with extreme caution. University enrolment projections begin with accurate forecasts of the size of the age-group from which most university students are drawn, but some estimate must be made of the proportion of that age-group which will enrol. Such an estimate will be based on assumptions about future attitudes toward university education, about the costs of this education and the amount and the form of financial support which will be available. The unreliability of

the results is strikingly illustrated in a report to the Carnegie Foundation for the Advancement of Teaching which cited university enrolment projections for the year 2000 as varying from an estimated decline of some 30 per cent to a doubling of 1974 enrolment!⁶ Long-range projections of PhD enrolments would probably be even less reliable because the attitude toward advanced study and the financial deterrents and incentives at this level can fluctuate even more sharply. Even short-range projections must be used with caution. The present enrolment in PhD programs does not tell us how many PhDs will be graduated in the next five or six years. It depends on the number of drop-outs and the average length of time required for completion, and these figures may shift significantly with changes in the level of financial assistance or with employment prospects. If we add to this the number of Canadians or immigrants who may come to Canada with PhDs from foreign universities, the margin of error is further increased.

Graduate employment is equally difficult to predict accurately. We know enough about the composition of present university faculty to project the number of replacements required over the next few years, but estimates of new positions depend on assumptions about university enrolment and staff/student ratios. It is even more difficult to estimate employment opportunities outside the university. Will vocational colleges and high schools employ more PhDs in the future? Will research in industry and government expand, and will expansion create a growing demand for PhDs? Forecasts of the future levels of economic activity are notoriously unreliable, and yet estimates of future employment opportunities must rely on some index of economic activity.

The problem becomes even more complex when we realize that even reliable projections of the supply and demand for PhDs are not enough. The PhD is a highly specialized degree, and a PhD in English cannot meet the demand for a PhD in economics. The demand may be more specific: a post for a PhD in contemporary drama will not be filled by a specialist in medieval literature. Even if the total demand equalled the total supply, there could be a shortage of PhDs in some fields and a surplus in others.

There is little agreement about the situation today, much less about the future. Is there a surplus of PhDs today? One study shows that 97 per cent of those who completed their PhD in 1973-74 had jobs by the time their thesis was accepted. Of the remaining 3 per cent, it seems that some found jobs

subsequently and others were not seeking employment. These statistics are reassuring for those who do not believe there is a surplus of PhDs. The same report, however, shows that a smaller proportion of graduates was finding employment in universities and colleges. It is encouraging to learn that some graduates with PhDs are finding career opportunities outside the university. On the other hand, some of these alternative careers may be a form of "underemployment" for which the skills and specialized training of the graduate are not required. The possibility of "underemployment" is more likely in the humanities where, in the study already referred to, unemployment was higher than in other areas and where the shift to non-university employment was more marked.⁷

There is at least general agreement that the traditional career pattern for PhDs in the humanities and social sciences, starting with a university teaching post, has been modified. We may not have reliable predictions, but we can be fairly sure that there will not be enough university teaching posts for the PhDs we graduate. We envisage an increased research activity within the university and within government and private enterprises. Increasing enrolments are predicted for the 1990s and this, coupled with the retirement of many of the present faculty in that decade, will create a demand for PhDs who begin their graduate training in the 1980s. We are therefore not convinced that the dire predictions of a surplus of PhDs will prove correct.

For these reasons we have not included the surplus production of PhDs as a major development affecting graduate studies. Some balance between supply and demand is necessary, but demand will be more elastic than most projections assume. We are concerned with future PhD enrolments, but our concern is with quality as well as numbers. If our recommendations are adopted, they will affect enrolment at the doctoral level, but it should not be taken for granted that this will mean a sharp reduction in PhD admissions.

In the following sections we present our views on the evolution of graduate studies in Canada. We do not propose a comprehensive blueprint. We concentrate on the major developments in recent years - the expansion of university research as an end in itself and the provincial or regional coordination of graduate studies - and we suggest the changes or modifications which seem necessary if universities are to continue to be

dynamic social institutions.

We begin with a discussion of the federal role in graduate studies in the light of new developments. We discuss aspects of graduate training, especially at the PhD level, and make suggestions for the future funding of university research.

Notes

1. J.A. Corry, Farewell the Ivory Tower (McGill-Queen's University Press, 1970), p. 102.
2. Ontario Commission on Post-Secondary Education, The Learning Society (Toronto, 1973), p. 107.
3. Report of the Royal Commission on University Organization and Structure (Saskatchewan, 1974), p. 14.
4. See, for example, British Columbia, Working Paper of Committee on University Governance, 1974; Alberta, Commission on Educational Planning, A Choice for the Future, 1972; Manitoba, Task Force on Post-Secondary Education, Report, 1973; Ontario, Commission on Post-Secondary Education, The Learning Society, 1973; New Brunswick, Higher Education Commission, Perspective: A Report to the Government on Operating and Capital Assistance to Universities and Colleges, 1974; Nova Scotia, Royal Commission on Education, Public Services and Municipal Relations, Report, 1974; Newfoundland, Royal Commission on Education and Youth, Report, 1968.
5. Max von Zur-Muehlen, "The PhD Dilemma in Canada Revisited," Canadian Journal of Higher Education, Vol. 8, No. 2, 1978, pp. 49 - 92.
6. Carnegie Foundation for the Advancement of Teaching, More Than Survival (San Francisco, 1975).
7. M.A. Preston, "Employment of New PhD Graduates, 1973-74", Annual Survey, Canadian Association of Graduate Schools.

I THE FEDERAL ROLE IN GRADUATE STUDIES

The federal government, because of its responsibilities, has a legitimate involvement in the development of graduate studies in Canadian universities. At the same time, Canadian universities are being integrated into provincial or, in the case of the Maritimes, regional systems. Taken separately, these two generalizations seem to be almost platitudes. Taken together, they summarize the federal dilemma in higher education. The federal government is relying on institutions which are becoming increasingly provincially administered.

Many Canadians have been slow to accept this reality. There is a temptation to deny what has happened because the reality is unpalatable. Some believe that academic freedom and objective scholarship depend on the bulwark of university autonomy and fear that the emergence of provincial systems will seriously limit this autonomy. Others are concerned with the problems of national unity and fear that the regionalism of provincial university systems is a threat to this unity. Nothing will be accomplished by denying this trend, however unpalatable it may seem. Universities are becoming primarily provincial institutions, and inevitably this must affect each university and the federal relationship with universities.

The federal government has played a major role in the development of graduate studies in Canada. The National Research Council is the major source of fellowship funds in the natural sciences and was for many years almost the only source. The Canada Council has been in existence for only two decades, but almost from its beginning it has been a major source of fellowships in the humanities and social sciences. Both councils have provided most of the money available for what is often identified as curiosity-oriented research - the kind of research most closely associated with university professors and graduate studies. The impact of these councils can hardly be exaggerated. Not only was the money an incentive to students and faculty, but the regulations and requirements adopted by the councils had an enormous influence on the pattern and academic standards of graduate studies and research. The councils and other federal undertakings, such as operating grants to universities and student loan

funds, were initiated because the federal government believed the expansion and the strengthening of Canadian universities, especially at the graduate level, were necessary to meet its own requirements for trained graduates and for research. It intervened directly because at the time there seemed to be no alternative. If federal funds had not been provided, the desired university development would not have occurred or would have been greatly delayed.

Today the federal role has been affected by the emergence of provincial or regional university systems. Provincial governments are now exercising more initiative, and consequently the federal government can no longer have the same impact on graduate studies or university research. Federal authorities must now recognize that they are dealing with provincial systems, and federal policies and federal institutions must be adapted to accord with this reality.

The factors which involved the federal government in graduate training and research in the past are still at work. The federal government has wide-ranging responsibilities and continues to rely on universities to provide skills and knowledge. It cannot ignore graduate studies in Canada or assume that provincial systems will automatically provide what it requires. It does mean, however, that the federal government will not be able to intervene as directly at the graduate level as it has in the past. It will have to act in conjunction with the provincial authorities if it is to ensure that the universities are to provide for its needs.

The federal role in graduate studies cannot be precisely defined or neatly segregated from provincial or other interests. Federal concerns however may be grouped in four broad categories:

1. Constitutional

The existing constitution gives the federal government the legislative authority in such areas as foreign affairs, national defence, immigration and interprovincial transportation and communication. The allocation of legislative powers can be modified or amended, but as long as there is a federal government it will have legislative authority in some designated areas. Our concern is that in those areas which the constitution identifies

as a federal sphere, the federal government will have to devise and implement policies. For this it must obviously rely on the opinions and advice of experts and will often have to undertake research. But the federal government cannot wait until there is a crisis; it must exercise foresight and ensure that there will be experts available and that research can be carried out when it is needed. In many cases the experts will be available only if universities have offered the appropriate graduate training to a sufficient number of graduate students, and research projects often will depend upon the existence of adequate university laboratories or libraries.

2. Federal Concerns

There are some areas of government activity not specifically identified by the constitution, but which are associated with objectives accepted by almost all Canadians and for which the federal government must also accept a major responsibility. For example, all levels of government are concerned with economic development, but the federal government must have a policy which is something more than the sum of provincial economic policies. Some degree of regional equalization is generally conceded to be in the Canadian interest; almost inevitably the responsibility falls on the federal government. In a country with two major cultural groups, the federal government must be concerned with bilingualism and biculturalism. There can be no precise boundaries between provincial and federal responsibilities in many of these areas, but Canadian unity, and the interest of Canada in general, clearly require federal leadership. In these areas, as in those identified by the constitution, the federal government must rely on experts and on research to meet its obligations and thus must ensure that personnel and resources are available.

3. Coordination of Provincial Systems

The emerging provincial or regional systems of post-secondary education will obviously need to practise liaison and cooperation. This is especially evident at the level of graduate studies, where there is a high degree of specialization and where the costs of some programs are high. Canada, for example, surely needs at least one well staffed and equipped centre for graduate studies in radio astronomy, northern development, atomic research

and Asian studies. It would be extravagant and wasteful to have one such centre in each provincial system. The advantages of coordinating and concentrating human and material resources in a few centres are evident. Provincial governments, however, will be understandably reluctant to create centres to meet Canadian rather than provincial requirements. The federal government could play a constructive role if it encouraged specialization and offered financial assistance permitting a provincial or regional system to provide facilities for graduate training and research beyond provincial or regional requirements.

4. The Pursuit of Excellence

These three categories of federal involvement - constitutional, the Canadian interest and the development of specialized centres in some fields of graduate training - do not cover the full range of federal interests in graduate studies in Canada. There is a broader and less precise category which involves the fostering of higher academic standards in all areas of graduate training and research. The federal government depends upon graduate facilities to train some of its employees, to provide consultants, equipment, facilities and personnel for federal research projects. The higher the academic standards, the more useful the universities will be. The federal government is also concerned with high standards as a matter of international prestige and, more directly, as a participant in international projects. In some areas, Canada's competitive position in international trade may be determined by standards of research and development. These federal concerns, however, cannot be limited to a few selected disciplines or groups of disciplines. Federal activities range so widely that almost any approach to human knowledge may be relevant. And since the level of scholarship in one discipline is likely to affect standards in other disciplines, the federal government has a double reason for fostering high academic standards in general.

In theory, at least, the constitutional dilemma of a federal government that must rely on provincially administered institutions could be resolved by creating a federal university or a parallel system of federal universities. We did not encounter anybody who seriously advocated that solution. A federal university, even if it was strictly a graduate

institution, would be prohibitively expensive. It would require almost the full range of disciplines and of interdisciplinary programs, because federal responsibilities are so wide-ranging and because disciplines interact. To duplicate the existing level of graduate training already available at Canadian universities would be a formidable task. The library alone would cost a fortune, and the faculty would involve a hidden cost because they would have to be drawn from existing universities and weaken them. Federal funds will accomplish more if they can be used to strengthen present universities in areas where the federal government has responsibilities.

These categories of federal involvement are not exclusively federal. The same areas concern individual universities and provincial governments. There would be specialists and there would be research in foreign affairs, linguistics and northern development even if the federal government gave no encouragement or support. The role of the federal government is not separate and distinct; it is complementary. It should encourage an emphasis in certain areas, based on its constitutional responsibilities or its view of Canadian interests; it should encourage the coordination of the provincial systems for a more effective allocation of scarce resources; and it should foster higher levels of scholarship in every aspect of graduate training. It cannot accomplish its objectives by working outside or at cross-purposes with the provincial systems.

II GRADUATE TRAINING

1. The Master's Level

Most of our recommendations are directed toward graduate training at the PhD level, but most of the graduate students in Canada are studying for a Master's degree. This degree, however, is not necessarily a research degree, and in many cases it is clearly a vocational or professional degree. In many fields, notably in education, social work or administrative studies, the Master's degree is seen as a terminal degree, qualifying its holders for professional employment rather than further graduate training.

We expect full-time and part-time Master's enrolment to increase, and we hope that, in future, Master's programs will become more diverse and varied. It is natural for many specialized occupations to aspire to professional status, and it is appropriate for them as they become established to require specialized training at the Master's level for new members. The Master's programs are flexible enough to provide appropriate training for a wide range of vocations or professions.

This pattern makes it inappropriate and unwise for us to make specific recommendations. The content and academic level of programs is best left to the universities and the professions concerned, as both have an interest in ensuring that graduates are suitably trained. Since most students are drawn from and subsequently find employment within the region or province in which the university is located, whatever planning, external regulation or appraisal of Master's programs is required can be done most appropriately at the provincial level.

The financial responsibility for graduate training at the Master's level should, at least initially, be the responsibility of provincial governments, including grants to cover university costs and bursaries or scholarships for students. We are dealing with an almost closed system, in which students from a province or region usually attend a university which is part of the provincial or regional system, and after graduation, find employment in that province or region. The programs themselves are so flexible that a satisfactory program can be offered within the province or

region whenever the demand appears to justify it. Under these circumstances, there seems to be no reason for direct intervention by the federal government or any federal agency, in the form of either scholarships and prizes or grants in aid of specific Master's programs. The federal government may provide support indirectly through a support program for post-secondary education or through student loan programs. The planning and supervision of these specific Master's programs, however, should be the responsibility of the provincial or regional educational authorities.

The number and diversity of the Master's programs and the high enrolment in them are evidence of their importance. We do not have the intimate knowledge of existing programs or the understanding of regional needs to make detailed recommendations. The broad principles underlying our recommendations at the doctoral level and for university research, however, are equally pertinent at the Master's level. Do present admissions procedures for Master's programs identify the best candidates? Can completion times be reduced without sacrificing academic standards? To what extent should teaching and research assistantships be associated with Master's training? How can the competition for graduate students between programs at different universities be focused on academic standards? Even if our recommendations at the doctoral level are not directly applicable at the Master's level, the same aims and objectives are appropriate.

We do have one specific recommendation at the Master's level. Many of the MA programs are vocational or professional and fall outside the academic and research interests of the Canada Council. We believe student aid at this level should be incorporated into a program of loans, grants and scholarships administered at the provincial level.

We recommend that the provinces initiate and administer a program to support studies at the Master's level in small universities.

We wish to draw attention to the special case of small universities that do not have organized MA programs. There are occasions when a member of the faculty of such a university has special qualifications and a special interest in a topic and has a well qualified student who wishes to do research. In such cases, an MA based primarily on a thesis is academically justified, and if the professor and student can design a suitable project they should be given financial support. The research done by the student and the graduate training he or she receives are likely to be of high standards, and the opportunity to give an MA under such circumstances would be a stimulus to research-oriented professors at smaller universities.

2. Graduate Training at the PhD Level

The PhD degree in the humanities and social sciences is a much more specialized degree than the MA, and not all provincial or regional university systems can be expected to provide the full range of doctoral programs. In some disciplines or fields, such as Classics or Asian Studies, it would clearly be wasteful for each province to offer a doctoral program and to ensure that qualified faculty and adequate library resources were available for doctoral students. In areas where there are few students, it is obviously more efficient to have only one or two doctoral programs in Canada; by concentrating the graduate faculty and the resources, these programs would cost less than offering a program in each province and the academic standards could be higher. From the viewpoint of costs and standards, therefore, PhD programs may not always fit neatly into provincial or regional university systems. At this level, we see the possibility of a significant federal contribution.

We have already commented on the controversy over the possible over-production of PhDs in Canada. The demand for limiting PhD enrolment comes most frequently from people who see education as a social investment. Graduate training is a major investment: it is costly for the students who

sacrifice their time and potential earning capacity while working for a PhD, and costly for society which one way and another finances these years of study and forgoes the social benefits which these students would have provided had they not been at university. If at the end of this training period the special qualifications and skills are not fully utilized - if the return on this social investment is small - the system is seen to be extravagant and wasteful, and the obvious solution is to bring supply and demand into better balance. In practice this usually means advocating limits on the number of candidates for the PhD.

Those who object to restraints on enrolment tend to stress the personal benefits of higher education. Students who are capable of graduate work at the doctoral level, they argue, should be allowed to continue their studies. As individuals they will benefit from graduate studies, and as citizens they will make a greater social contribution. The only control on PhD enrolment, therefore, should be voluntary. Students should be warned that traditional employment opportunities are now more limited, but the final decision should be left to them.

The argument cannot be resolved by opting for either of these social objectives. Graduate education is an economic investment and society has a responsibility to see its resources invested wisely. Nor is it enough to say that predictions of future supply and demand are unreliable and should be ignored. Every system relies to some extent on estimates of trends and probabilities; even warning students of limited job opportunities implies that demand should affect supply. But it is too arbitrary to reject a qualified, dedicated student solely because there is some risk of subsequent under-employment. Economic factors are not the only criteria. "Underemployment" may be a useful concept, but it does not measure the contributions that education can make to the quality of life. The development of an individual's potential is also a valid social objective. Like economic factors, however, this emphasis on the individual cannot become an exclusive priority. Under the present system, where graduate training is publicly supported, an automatic commitment to admit any qualified applicant to the PhD program of his choice is too serious to be taken lightly. It would mean giving the highest social priority to graduate training, because it would be a commitment

to spend public funds that might otherwise be allocated to health, national defence or other social objectives.

In our opinion the two extremes of a rigid limit on PhD enrolment and the unrestricted admission of all qualified candidates are undesirable. Neither economic planning nor individual choice would be fully satisfactory. Graduate training offers social and personal benefits, society and the individual should assess the potential benefits to them and invest accordingly. There is a demand for highly trained graduates as teachers and researchers, and society should invest the funds to supply this demand. There is also an advantage to individuals, even if they do not find employment which fully utilizes their knowledge or skills, and they should have the choice of paying some or all of the costs in order to gain that personal advantage. Any estimates, whether of supply and demand or of personal benefits, are fallible, and rigid structures would almost certainly lead to chaos.

In the proposals that follow, we have tried to achieve a flexible system in which potential social and individual benefits will be correlated with social and individual costs, and in which the total PhD enrolment will be the result of a wide range of social and individual judgments.

a. Admissions Procedures at the PhD Level

Any control over the supply or quality of PhDs must begin with admissions to doctoral programs. Number and quality will also depend on the length of the program and the proportion of dropouts or failures, but the first major decisions come when students apply for admission to a program. At the moment these decisions are made by a large number of uncoordinated departmental committees, operating within universities and with little or no knowledge of what other committees in other universities are doing.

Attempts to regulate admissions by restricting the number of university departments offering doctoral programs have not been effective. Until recently most universities could decide what PhD programs they would offer and could determine the admissions requirements. In most provinces the governments have established appraisal procedures for introducing new doctoral programs, but these procedures have not restricted the number of programs. In 1970, it is estimated, there were 851 doctoral programs offered

by Canadian universities; in 1974 the number had increased to 1,146.¹ It is generally agreed that not all of the new programs were necessary and that costs could be reduced and academic standards raised if some were eliminated. Universities, however, have generally been reluctant to give up programs once they have been established, and provincial governments have been reluctant to take on the invidious task of identifying the least justifiable programs and using their authority to cancel them.²

The large number of doctoral programs, and the fact that each university department determines the number of admissions to its program, makes it difficult to regulate enrolment. University committees are concerned primarily with the academic qualifications of doctoral candidates. After a department has identified a candidate as qualified and capable of graduate work, it is subject to many pressures to admit him to the doctoral program. An active graduate program with a large number of graduate students brings prestige to the department and to its members. The students may be very helpful as teaching or research assistants. An added factor in most provinces is that university revenues are based on enrolment, and a graduate student increases university income. Conversely, an individual department cannot be expected to give much weight to estimates of future demand. Its decision about a student will have almost no effect on total enrolment in Canada and, if it does not admit the student, some other university usually will. A common practice is to shift the onus of decision to the students by warning them that job opportunities may be limited when they graduate. If they still wish to enrol, they are admitted. Enrolment might well have been higher if the students had not been influenced by the decline in university appointments, but it also speaks well for the academic standards of admissions committees that, in the face of all the pressures to admit students, they limited admissions to students with high qualifications.

We do not believe that this pattern can continue for long. Where university grants are linked to enrolments, the decision by a departmental committee to admit a PhD student automatically commits the provincial government to an increased grant. This open-ended commitment was acceptable at a time when there was a strong demand for PhDs and when an investment in graduate

training seemed to promise attractive economic dividends. It is no longer politically acceptable when the demand seems to have declined and when the social return on the investment is questioned. This changed attitude resulted in a decision of the Ontario government, in December 1975, to freeze graduate funding and make it independent of enrolment. It is not known what the funding policy will be when the freeze ends, but it seems clear that it will not be an open-ended commitment to fund any graduate student admitted by a university department. Within the next few years it seems certain that admissions procedures will be modified in most provinces, and that the sum of the decisions of individual departments will no longer determine the total enrolment in the province.

The reforms over the next few years could focus too directly on the faults of the present system and unintentionally sacrifice some of its positive features. Governments, it seems clear, will insist on a greater degree of political control over the costs of graduate training. Governments are accountable for their expenditures and have every right to supervise the spending of public funds. The desire to economize, however, may lead to unwise academic policies. It would be cheaper to hire less qualified professors and to have larger classes, but in academic terms that would be less efficient. At the graduate level, one obvious way to control government expenditures is to limit enrolment. We have already pointed out the difficulties of trying to link enrolment to predictions of future demand. The procedures used to impose limits on enrolment may also have undesirable effects. Any quota system will tend to crystallize the existing pattern and by so doing protect programs where standards may be declining and penalize innovative programs. A quota system may ignore or run contrary to the innumerable academic judgments by which professors assess the academic potential of students and students in turn assess the academic calibre of professors and programs. Limiting enrolment is not necessarily the most efficient response to the problem of rising costs; limiting enrolment by a quota system would almost certainly be grossly inefficient in the long run.

To begin with admissions procedures, the first and most important step is to identify the students who are qualified for and capable of

graduate work at the doctoral level. The aim is to assess the students' academic potential; the most reliable criteria are the students' academic records and the confidential appraisals of their professors. The decisions need not have immediate financial implications. They are primarily academic and should logically be made by university professors, who have the necessary competence and a vested interest in high academic standards.

We have already noted that individual departments have strong incentives to admit graduate students. In order to ensure that the assessments are based on academic criteria and are not affected by other departmental concerns, we propose that doctoral candidates be appraised by provincial committees instead of departmental committees. The committees, one for each discipline and composed of faculty members drawn from university departments within the province, would go far to ensure that the assessments of doctoral candidates would be objective and that high academic standards would be maintained. There would be no restriction in the mobility of candidates who could apply for admission to doctoral studies in the province of their choice. The only significant modification is that the admissions committees would operate at the provincial or regional level instead of the university level.

We recommend that within each province or, for the Maritimes, within the region, committees be appointed to screen the PhD candidates and to list the successful candidates in rank order.

These lists are not lists of candidates who will necessarily be admitted to doctoral programs. They are candidates who are rated as academically qualified for doctoral studies. Candidates who do not make the lists are ineligible. The next step is to establish how many qualified candidates should be enrolled in doctoral programs.

The future need of society should be a significant factor in determining total enrolment. We have already referred to the difficulty of forecasting future demand, but the need for some estimates cannot be ignored. The expected increase in university enrolment in the 1990s, plus the unusually high proportion of faculty retiring at that time, will justify a large number of admissions to doctoral programs in the mid-1980s.

Projections based on existing patterns of supply and demand are only a beginning. Economic patterns are changing, and the increasing reliance on

research means an increasing demand for researchers not reflected in current statistics. Some degree of "underemployment" is probably desirable; a generation ago a farmer or a journalist with a university degree seemed overqualified, and a generation hence new professions will have emerged and older professions will have higher standards, and some of the "underemployment" of today will have become the norm. Even the training of some "surplus" PhDs may produce economic benefits; competition for jobs can lead to higher standards of performance. The assessment of the economic benefits of advanced education has fluctuated in the past but the overall pattern has been one of expanding demand. There is no reason to believe that this long-range pattern has suddenly become obsolete.

Levels of enrolment should not be based solely on estimates of economic need, however sophisticated they may be. A university department or a professor may have academic reasons to admit a student which have no direct relationship to economic need. A research project may be planned which is expected to make a significant contribution to the discipline even if there is no obvious economic contribution, and a student may have exceptional research qualifications or unique interest in the topic. The justification for admitting such a student would be academic rather than economic.

The individual student's commitment to graduate studies is another factor that should be weighed. A student who meets the academic requirements and who is prepared to sacrifice time and money for a PhD for his own development, without any assurance of economic rewards, should have at least a chance to pursue his own interests.

The objective of planned enrolment should be a system in which the various factors - estimates of economic benefits to society, of academic contributions to knowledge, of benefits to the individual student - can be weighed and balanced. A price system is needed which will allow governments, universities and students to equate costs with anticipated benefits. The sum of the decisions would then establish the enrolment. Under this system the government's contribution would be based on its estimate of the future need for highly trained teachers and researchers. The provincial support would then be equal to the cost of training the number of PhDs required according to the estimate. Universities in turn should contribute from

scholarship funds or from the annual budget according to their assessment of their needs or interests. Individual students should be able to contribute directly to meet their personal expenses or to make up any deficit in the costs of their training if they choose to do so. Total enrolment would not be arbitrarily fixed but the result of a wide range of economic, institutional and individual decisions, each attempting to balance costs with benefits.

This is not a revolutionary proposal. It is almost a description of our present system of financing graduate studies. Governments make grants to universities which are intended to be spent directly or indirectly on graduate training. Even the size of the grant reflects the government's view of the social benefits of this graduate training. Universities in turn allocate funds for doctoral programs and doctoral fellowships and, here too, the amount reflects the university's view of the importance of the program. Present-day students forgo potential income, provide their subsistence and pay fees, with or without scholarship or bursary. Their decision to do graduate work already involves balancing costs against potential benefits. Our recommendations, therefore, are not a radical departure from the present system. We see them only as adjustments, designed to reestablish the correlation between costs and benefits at each level.

For example, most provincial governments in the 1960s adopted a system of grants to universities based on enrolment, with no upper limits. This was an appropriate response when the demand for university graduates, especially those with a PhD, greatly exceeded the supply. The provincial objective of meeting future needs remains unchanged but, now that the demand for PhDs may be less elastic, the basis on which the government grant is determined needs to be changed. Juggling the amount of the grant per student or freezing the grant at an arbitrary level are only stop-gap measures. The appropriate response is for provincial educational authorities to estimate the future need for graduates with a PhD and to calculate the appropriate level of enrolment in PhD programs, and to include an item in the budget to cover the cost of this graduate training.

Social change is too unpredictable to be amenable to long-range planning. Projections of present patterns will almost certainly underestimate future requirements. Provincial authorities will need to work in conjunction with

other provincial governments, with educational authorities in other provinces, with the appropriate federal agencies and with university officials. The estimates will at least be reasoned approximations of future need and adjustments can be made each year as predictions are modified.

Even with these precautions, there will be miscalculations and misjudgments. Human fallibility, however, is no excuse for not planning. Governments already decide how much to invest annually in higher education and, in final analysis, governments have a responsibility to decide how much public money should be invested in doctoral studies. PhD enrolment will not be rigidly determined by this estimate. University administrations and individual students will also have some influence on the actual enrolment. Even the decision of the government will be primarily a financial decision with some flexibility in determining how the money will be distributed.

We recommend that provincial governments meet a share of the costs of doctoral training by providing an annual sum equivalent to the cost of student scholarships and full tuition costs up to the number arrived at by estimates of future need.

Some time will be required for educational officials to make the necessary projections and to establish contact with all the interested agencies. In the interim we suggest that provincial governments calculate their present expenditures on doctoral fellowships and their grants to universities to cover the cost of graduate training at the doctoral level and combine these amounts to arrive at the sum to be allocated to doctoral training.

This amount should be offered in the form of graduate scholarships. A certain proportion of the total - possibly one-third - should be awarded as full scholarships, covering both student and university costs in full. The rest might be offered in the form of partial fellowships, possibly with one-third of the total covering 80 per cent of the scholarship and university costs, and with the final third covering 60 per cent of these expenses. These grants would be allocated to the PhD candidates approved by the provincial committees in order of rank.

For those students who are offered only partial fellowships, the possibility of undertaking doctoral studies will depend on finding supplemen-

tary sources of support. A university is one possible source of funds. A university may wish to enrol a specific student because his research interests coincide with those of the university or the department, or a faculty member may have special reasons for wanting him as a graduate student. The university will have to rely on its internal budget for the balance of the fellowship and tuition costs. If it considers that the academic advantages outweigh this burden, it might offer to supplement the provincial contribution. For those students who are offered only partial government support and partial or no university support, there still remains the option of making up the difference at their own expense.

Our proposal may be clearer if we offer some hypothetical illustrations. Let us assume that the annual cost to the university for a doctoral student is \$11,000 and that the cost to the average student of a year at university is \$4,000. If a provincial government decides on a figure of 100 new PhD candidates based on its estimate of future need, it will budget \$1,500,000 for this part of its program. One-third, or \$500,000 would be offered in the form of grants of \$15,000 for the top 33 students on the list prepared by the committees, \$4,000 for each student and \$11,000 for the university which they will be attending. The next third will be offered in the form of grants of \$12,000, \$3,200 for each student and \$8,800 to the university. The final third will be distributed as grants of \$2,400 for each student and \$6,600 for the university. For the students in the second and third categories, either the university or the student will have to make up the deficits in the fellowship and the tuition fees. A student in the third category and with no university support would have to find \$1,600 for the balance of his subsistence and would have to pay the university a fee of \$4,400.

There remains the problem of deciding how these scholarships should be distributed among the various disciplines. Estimates of social need can serve as indicators of suitable total enrolment in doctoral studies, but they are too imprecise to determine the enrolment by discipline, especially in classics or some modern languages, where the numbers are very small. A simpler procedure would be to work from the lists of eligible candidates prepared by the discipline committees and award enough scholarships in each

discipline to ensure the same success rate in each discipline. This is far from arbitrary, because these lists will reflect to some extent the students' assumptions about employment opportunities, the students' choice of discipline and their academic standards. In order to ensure comparable academic standards among disciplines, however, a joint academic committee should compare the academic qualifications of the students at the cut-off points and should adjust the cut-off points if the standards vary.

The next step is to decide which universities these students will attend. We believe it is the responsibility of the provincial authorities to ensure that every doctoral program offered within the province is academically sound. Certification procedures have already been established in most provinces for this purpose. We do not believe that provincial authorities should decide how many students any of these doctoral programs should have. Any quota system would be rigid, inflexible and inconsistent with the objective of high academic standards. In theory, a quota system could ensure that the best qualified departments trained most of the PhD students. In practice, governments and university officials would be reluctant to discriminate publicly between departments and would be inclined to enrol some students in each program. Once established, the quotas will be difficult to change, though appointments, retirements and shifting emphases within a discipline will mean that the academic rating of the departments will change as the years pass.

The students are likely to be the best judges of which doctoral program is the most suitable for them. They may be influenced by non-academic factors, such as geographic convenience or friendship, but it is so clearly in their interests to study under the best teachers in their field or to attend the institution with the best library or research facilities in their field that their decisions will be based largely on academic criteria. Universities will only be able to influence their choice in those cases where the university offers to supplement partial fellowships.

We recommend that fellowship recipients should be allowed to enrol in the doctoral program of their choice within the province.

University departments would still retain the right to refuse admission to a student if they felt there were valid academic reasons for this refusal

- if they were convinced, for example, that they could not offer the appropriate courses or provide the specialized research supervision which the student would require. In most cases, however, the departments will be delighted to have able graduate students, and the universities will welcome students who have personal scholarships and who also bring with them a grant to cover the full costs of their education.

For university departments, student choice means that enrolment is less predictable than with a quota system. Universities, however, have managed to survive the uncertainties of existing enrolment procedures. Student choice will encourage departments to compete for students by raising their academic standards. In the long run the financial investment in graduate studies should go to the best institutions. Departments which attract enough students to ensure that graduate seminars have optimum enrolment will be more efficient and should be able to spend more money on teaching staff, library holdings or other facilities. The element of competition between graduate programs may lead to stress and insecurity in some departments, but the pressure to raise academic standards should improve graduate training in the province or region.

This brief outline of our proposals for the admission of PhD students to doctoral programs leaves many details unresolved. We have deliberately omitted reference to part-time doctoral students because, in our opinion, full-time study at the doctoral level offers many academic advantages; it is especially difficult to do research and to write a thesis on a part-time basis. Our recommendations have been directed to encouraging full-time study at this level although special regulations will be required for those students who cannot study full time. University accounting procedures will have to be refined so that the full tuition costs per student can be established. We are sure the details can be worked out by university and provincial authorities if our proposals for changes in admissions procedures and the financing of doctoral programs are accepted.

b. The Federal Role at the PhD Level

The categories of federal concern provide guidelines to the appropriate federal role at the PhD level. The federal government has specific constitutional responsibilities, a direct concern for Canadian interests

and for the coordination of provincial university systems. It therefore requires experts in certain areas who can conduct research or act as consultants, and in many cases a PhD is almost a prerequisite. We will return to the question of special federal grants to initiate or develop doctoral programs which provincial authorities might not otherwise provide. Where the programs already exist, and where federal departments or agencies only wish to ensure that enrolment is large enough to meet their needs, it is logical for these departments or agencies to provide some scholarships.

We recommend that the federal government provide scholarships, including full tuition costs, in those areas where it can identify a specific federal need for graduates with a PhD.

It is not as easy to identify an appropriate federal role for the category which we have called the pursuit of excellence. In the past the Canada Council has played a major role in providing fellowships for doctoral candidates, and it deserves great credit for encouraging doctoral studies in the humanities and social sciences when the need for PhDs was apparent but the resources inadequate. Provincial authorities now have accepted greater responsibilities, and we expect this trend to continue. The federal government still has an interest in encouraging higher academic standards in all areas of graduate studies and so should continue to provide some support for doctoral programs. One form of this federal support should be a program of federal fellowships in the humanities and social sciences.

In our discussions across the country we found widespread support for the continuation of a doctoral fellowship program by the Canada Council or its successor. There was some difference of opinion about how large the program should be. A number of the university task forces noted that the proportion of doctoral candidates holding Canada Council awards had declined.³ Many academics believed that the trend should be reversed, and in the words of the Queen's University task force, "the Canada Council should increase the proportion of PhD students in the humanities and social sciences through its fellowship program."⁴

We do not believe that the federal government, through the Canada Council or its successor, should have the major financial responsibility for doctoral training in Canada. The Council's role, as we interpret it, is a

complementary role, separate from specific federal concerns for doctoral training and committed to fostering and encouraging higher academic standards generally at the doctoral level. A commitment to higher standards is little help in determining the precise amount which should be included in the Council budget, because there is no limit to what might be spent. We suggest, therefore, that the complementary role of the Canada Council be recognized by having its fellowship grants associated with the proposed provincial or regional doctoral fellowship programs.

The Council or its successor would still award its fellowships directly. It would undertake to provide a fixed proportion of the fellowship funds allocated by the provincial authorities, possibly 10 per cent. It would take advantage of the lists prepared by the provincial or regional committees, would rank the leading candidates in each discipline on a single list and would offer its fellowships to the leading candidates on each list. These scholarships would include a grant to the host university to defray the full tuition costs of the student. The provincial governments would thus be relieved of the fellowship costs of the winners of Canada Council scholarships.

We recommend that the Canada Council or its successor award a limited number of fellowships in the humanities and social sciences, tenable at any Canadian university and with a grant to that university to cover the full costs of tuition.

We would expect the Canada Council or its successor to award the same percentage of the total fellowships for each discipline. There may be exceptional circumstances when the federal forecasts for highly trained manpower requirements differ significantly from the assessments of the provincial authorities. Under these circumstances, the Canada Council might want to reflect the federal perspective by increasing its percentage of the total fellowships in some disciplines and reducing it in others.

Another special problem is that of support for a Canadian doctoral student who proposes to attend a university outside Canada. There are many reasons for encouraging outstanding students to study in Canada. Their intellectual and financial contribution is highly valuable but where there is no doctoral program in Canada as well-suited to the student's needs as some

program offered abroad, the only decision consistent with fostering high academic standards is to grant a fellowship tenable at a foreign university.

We therefore recommend that the Canada Council fellowships in the humanities and social sciences shall be tenable outside Canada only when it can be shown that the student has sound academic reasons for attending a foreign university.

In this case the Council fellowship would include an amount to cover the student's fees but would not include a special grant to the host university over the established fees.

These recommendations for Canada Council doctoral fellowships have been associated with proposed changes at the provincial or regional levels for admissions and provincial or regional fellowships. The Canada Council or its successor will not have to wait until these changes have been introduced. It can continue its current practice of sending each university a complete list of its applicants for awards with a request to put them in rank order by discipline. It can appoint provincial or regional committees, by discipline, to do a preliminary screening of candidates and make recommendations. National committees would then establish the rank order of the successful candidates in the provincial or regional competitions. When a province or region sets up its own admissions committees, they will replace the screening committees established by the Canada Council.

The cost of our proposals has not been determined because federal support for doctoral students should be decided in conjunction with the level of federal support for academic research. In the final analysis, the total budget for the Canada Council will be determined by the political process. For the academic year 1975-76, the Canada Council was distributing doctoral fellowships to 929 award holders at Canadian universities and 605 award holders at foreign or unspecified universities, at an average cost of \$5,698 per student, for a total of about \$8.7 million. If the

grants to students remain constant, our recommendations would require the Council or its successor to pay, in addition, the institutional costs for each student attending a Canadian university, possibly an average of \$11,000, and the fees for each student attending a foreign university, possibly \$2,500. The same scholarship budget for the Council would support the equivalent of approximately 400 doctoral students at Canadian universities and 200 at foreign universities. These figures are not intended to suggest what the Council or its successor should do. We have suggested support to the level of 10 per cent of the provincial grants for doctoral students. The exact level of Council support should be determined by the size of its budget and the proportion of this budget which it proposes to allocate to doctoral fellowships.

These recommendations are not comprehensive. Many special cases will have to be dealt with on almost an individual basis. Even here the emergence of provincial systems suggests what procedures would be the most appropriate. If foreign students seeking admission to Canadian doctoral programs come under a federal program of external aid, or under some federal scholarship arrangement such as the Commonwealth fellowship program, the federal government should meet its obligation to the student and should reimburse the host university for the costs involved. Foreign students who wish to come as individuals, without landed immigrant status, would be eligible only if they were included in the provincial committee list of successful candidates. They would not be eligible for provincial or federal fellowships and would have to finance their own education or rely on university scholarships.

It is possible that the recommendations we have made for the Canada Council or its successor would be appropriate for the fellowship programs of the National Research Council and the Medical Research Council. Our mandate is limited to graduate studies in the humanities and social sciences. We have no experience or special knowledge of the problems of graduate training in the natural or medical sciences and cannot suggest measures which might be adopted in those areas. It seems probable, however, that the establishment of provincial systems will affect the federal role in graduate training

and research in the natural and life sciences as well as in the humanities and social sciences and that some of our recommendations might be appropriate for the other research councils.

c. Renewals of PhD Fellowships

In discussions with our colleagues across the country we found a widespread interest in the form and content of PhD programs, and the hope was often expressed that our Commission would be able to recommend structural or pedagogical reforms. Within each discipline, we usually found a broad consensus on the appropriate structure of the doctoral program. There were minor differences of opinion on course requirements and prerequisites, on the relative merits of seminars or directed research or on the pros and cons of specialization, but in most cases there was agreement on fundamentals, and the debate was over details or refinements. Each discipline faced special problems. It soon became obvious that the professors and students within each discipline were the most reliable judges of what doctoral programs should include and which pedagogical techniques were appropriate. On these issues, modifications and reform could come only from within the discipline. Since there was a common commitment within each discipline to high academic standards and broad consensus on what high academic standards were, we concluded that program development could best be left to individual disciplines.

The one exception was the length of the PhD program. We found a widespread conviction among students, professors and administrators that too much time was required to earn a PhD in the humanities and social sciences. Part of the blame can be attributed to the stress placed on the comprehensives and the longer time which students give to preparing for these examinations. Another factor is the common practice of PhD candidates to take a full-time teaching or research position and write the thesis in their spare time. We also noted some pressures to prolong doctoral programs even more. In some disciplines the major pressure seemed to come from recent advances in some sector and the need to expand the program to include the new approach or new knowledge. In other cases the pressure seemed to come from the competition for available teaching or research posts and the

desire of faculty and student to satisfy any demands an employer might impose. Some students preferred to prolong their doctoral studies and have their fellowships renewed because the alternative was to be unemployed. It seems almost certain that the pressures to lengthen doctoral programs will increase over the next few years and that the net effect of the individual decisions by students, professors and employers will be to extend the already overly long time required for a PhD.

Our primary concern is with the objectives and efficacy of graduate training. Lengthening the period of training is unnecessary and wrong. A PhD was never intended to certify that its recipient knows all there is to be known in his field. It attests to his knowledge of the fundamentals in the discipline and his ability to apply this knowledge in a scholarly and imaginative way. If the frontiers of the discipline have expanded or if new sectors of knowledge must be incorporated in the program, the response should not be merely to lengthen this latter. It should be the responsibility of the faculty to restructure the program to integrate the new developments without extending the training period. University departments - or students - should not yield to the pressure of employers to have the period of graduate training prolonged. Employers should be more concerned with the ability and potential of a PhD graduate than with the courses taken, and most doctoral programs are already long enough to assess these qualities.

The problem is serious. As we have pointed out, the record of Canadian universities is far from satisfactory. It apparently takes longer on the average for their students in the humanities and social sciences to complete their doctorate than for comparable students taking the doctorate at universities in other countries. A comparison with doctoral students in the natural sciences is also disturbing: there is a higher proportion of unsuccessful candidates and dropouts in the humanities and social sciences, a higher proportion of candidates still registered as students but apparently inactive and the successful candidates have usually taken longer to complete their PhD.⁵ It cannot be assumed that the time required for a doctorate in other countries or in one of the natural sciences should become the norm for a PhD in the humanities or the social sciences or that the procedures in the natural sciences should be adopted as a model. The time devoted to a PhD in

the humanities and social sciences can be reduced, we are convinced, and the tragic waste of dropouts and candidates identified as "All But Dissertation" can be minimized.

We are not suggesting rigid or arbitrary limitations on the length of PhD programs. Each student and each topic is a special case. Three critical stages exist in every PhD program where something can and should be done to counteract the pressures which now exist for prolonging study at the PhD level. The first stage is admission to the program: if mediocre candidates are admitted they are almost certain to drop out or to take longer to qualify for the degree. Our recommendations on admission procedures will help to ensure careful screening of potential candidates. The second stage is the period during which the candidate completes his formal studies, a phase usually terminated by passing the tests known as the "comprehensives." The third stage is writing the thesis. Procedures can be adopted which will encourage a shorter lapse of time at each of these two stages without sacrificing academic standards. The new Social Sciences and Humanities Research Council can modify its fellowship regulations as an example to provincial and university authorities.

A PhD fellowship should provide the student with assurance of financial support as long as he is making satisfactory progress. It would be wasteful to have renewals influenced by budgetary fluctuations or shifting predictions of employment opportunities. The candidate's progress, however, cannot be rigorously assessed on an annual basis. For the student who receives a fellowship in the spring and enrolls in the fall, a progress report is required by the end of the calendar year if the fellowship is to be renewed on a competitive basis for the next year. Rather than a perfunctory assessment, we propose that fellowships be awarded for two years. Students would be expected to give proof of following the prescribed program, but no appraisal of their progress should be required. We therefore recommend that Canada Council fellowships be initially awarded for a period of two years.

In most Canadian doctoral programs the comprehensives may be written at the end of the second year of full-time graduate study, which would mean the end of the first year of a Canada Council fellowship. All too often the comprehensives are postponed, and it is not unusual for three or more years of

full-time graduate study to elapse before they are completed. Since only after this phase is completed can the student give full attention to his research, some encouragement is needed for the university and the student to see that this phase is not unduly prolonged. We suggest that students not be allowed to apply for fellowship renewals until they have successfully completed their comprehensives. If six months is allowed for the administration of the renewal applications, this would still allow the student to take up to two and a half years of full-time graduate study to complete his comprehensives and to have his renewal approved by the time his first Council fellowship runs out. Any prolonged postponement of the comprehensives would mean an interregnum between the initial fellowship and the renewal. The renewal, like the fellowship, would cover university costs as well as a grant to the student, but the university and the student would be encouraged to avoid unnecessary delay.

An initial two-year fellowship would permit the Council or its successor to adopt different appraisal procedures for all renewal applications. A candidate on application will have completed preliminary studies and will be devoting full time to the thesis. The application therefore can take the form of a research application, outlining the thesis project, the sources, the schedule and the research costs. The supervisor's supporting letter would comment on the student's academic abilities and on the project.

Applications for renewal could be assessed along the lines of applications for research grants. Is the thesis proposal feasible? Is the methodology sound? Is the proposed budget realistic? Will the completed thesis have any scholarly significance? Can it be completed in the allotted time?

A rigorous appraisal of the thesis project at this stage will contribute to higher standards of research and to shortening the time required to complete the thesis. The close association of supervisor and graduate student in the natural sciences may help to explain the higher completion rates and shorter average time required for a PhD in these sciences. This relationship cannot be duplicated in the humanities and social sciences, but a closer association of the supervisor and student would be helpful. One

way to encourage this is to associate the supervisor in a formal way with the application for a renewal.

Under most circumstances, two years of full-time research and writing should be sufficient to complete a doctoral thesis. If more time is required, probably the thesis topic was too ambitious. Since the recipient of a Canada Council grant normally will have completed one year of full-time research under the initial two-year fellowship, the renewal, if granted, will be for one year only. The grant, because it is a research grant, should include an amount to cover such legitimate research costs as travel, maintenance, equipment, computer and typing costs.

We recommend that the Canada Council fellowships be renewable for one year, after successful completion of all preliminary requirements and favorable evaluation of the thesis proposal, and that this renewal should include an amount to defray research expenses.

The Canada Council or its successor may decide that unforeseen or exceptional circumstances have delayed the completion of a doctoral thesis. It may therefore wish to consider applications for an extension of its fellowship renewal. We are in favor of flexibility, but such extensions should be exceptional.

These recommendations are directed to the Canada Council or its successor, but the same arguments are equally valid for any provincial or university fellowship programs. Currently the path of least resistance is often to prolong the period of preparation for the comprehensives and to allow more time to complete the thesis. The academic problems posed by the expansion of knowledge within a discipline can be resolved within the confines of a two-year preparation for the comprehensives, and appropriate research projects can be designed to permit the completion of a thesis over the next two years without sacrificing academic standards. We hope other granting agencies will adopt regulations similar to these we have recommended for the Social Sciences and Humanities Research Council.

d. Teaching and Research Assistants

One aspect of graduate training requires special consideration. Doctoral candidates are sometimes asked or expected to work as teaching assistants or

as research assistants. The experience of teaching or of doing research may well be valuable for the student, but there is always a danger that the time required will encroach on the time which should be devoted to other aspects of graduate training. Many fellowship programs and many graduate faculties protect the student against undue exploitation; the Canada Council, for example, limits its doctoral fellows to a maximum of seven hours a week for such work. The pressure to rely on graduate students as teaching or research assistants already exists and is likely to increase over the next few years. A brief consideration of the academic implications seems in order.

Many teaching and research assistants are students working for a degree at the master's level. The wide range of master's programs makes generalizations dangerous. Some form of apprenticeship in teaching or research may be quite appropriate. On the other hand, we suspect that our reservations about the reliance on doctoral students for teaching and research also apply to the reliance on master's students. When departments and universities review their master's programs, we suggest they insist that the use of the students as assistants should be justified in academic terms as an integral part of the program. Otherwise, our comments on doctoral candidates may apply with equal validity to students at the master's level.

Doctoral candidates are frequently expected to work as teaching assistants at the undergraduate level. This teaching may be a helpful learning experience; the candidates may know their subject better if they have to teach it at an elementary level. As well, the teaching can be seen as a form of apprenticeship for those who look forward to a teaching career. Not all PhDs in the humanities and social sciences will become university professors. Therefore, it is difficult to justify a compulsory teaching apprenticeship for all doctoral candidates. In a period when university budgets are restricted, however, doctoral programs may be influenced by financial as well as academic factors. It is cheaper to pay an assistant than a full-time faculty member. The faculty also benefit if teaching assistants relieve them of some teaching duties. The danger is that the benefits to the university and to the individual faculty member will overshadow the interests of the graduate students.

A Canada Council doctoral fellow should be permitted to act as a teaching assistant only if this teaching can be justified as contributing directly to his or her training or as a form of professional apprenticeship. In either case the onus should be on the student and the supervisor to show that this teaching experience is an integral part of the doctoral program. Even if this requirement is met, the time required for this teaching should not exceed the present permitted maximum.

Students on partial fellowships should be allowed to take on teaching responsibilities even if they are not part of their training program or form of apprenticeship, but this teaching should be recognized for what it is - a means of earning money. The student should be paid a standard rate as a part-time instructor, and there should be regulations to ensure that his teaching duties do not seriously encroach on his responsibilities as a graduate student.

Similar regulations should be formulated for research assistantships. Experience as a research assistant may contribute to graduate training. Research, however, may be an undesirable distraction if the student is preparing for comprehensives, or it may be a serious encroachment on personal time if it is unrelated to research for the student's own thesis. No special measures seem necessary to provide research experience, because the thesis requirement ensures that a doctoral student will do research. We do not believe that Canada Council fellows should act as research assistants if the only justification is that they will gain research experience. Students on partial fellowships may be permitted to act as research assistants to supplement their income but, as in the case of teaching assistants, they should then be paid standard rates and there should be fellowship regulations to limit the time which they can devote to gainful employment.

It is quite a different case when the research for a student's thesis is related to or even an integral part of a broader research project. The student's own research may not be possible without equipment or data which the larger project can provide, or the student's project may be a stage of the larger project. Under these circumstances it is not always possible to make a distinction between a student's own research and his work as research assistant for the major project. In academic terms this coordination of a

thesis with a larger research project is often highly desirable. The student has the advantage of working closely with experienced researchers and of being involved in what may be a more complex or more stimulating research project. The scope and significance of his own thesis may be enhanced by the association. The director of the project may find that he benefits from having a research assistant with a strong personal interest in the project. The association of a thesis with a complementary research project can have financial and academic advantages and should be encouraged.

There is a major hazard, however, if the thesis is only peripherally related to the larger research project. The doctoral candidate may find that his involvement in the project interferes with or delays his own research. The regulation which limits the time which a Canada Council doctoral fellow can spend as a research assistant is not satisfactory. The student may have no choice but to work on the main project or find a different thesis topic. Regulations are needed which will allow the doctoral candidate to take advantage of the financial and academic benefits of associating with a larger research topic without being exploited by the project director or being unduly penalized for the delay in completing his or her thesis.

We propose that the Canada Council resolve this problem by relating its fellowship payments only to that proportion of the fellow's time which can be considered as spent on graduate training - that is, on the doctoral thesis. Financial support for the time apportioned to the larger research project would have to come from some other source, presumably from the funding for that research project. The Canada Council fellow would not be penalized; if participation in a research project limits time he gives to his own thesis and, as an example, his fellowship payments are halved, the student should be allowed to receive these fellowship payments for double the normal period.

The apportionment of the doctoral fellow's time should not present any serious difficulties. The graduate student in his renewal application to the Canada Council would outline his or her research plans and explain how the association with the larger research project is related to the thesis. The director of the project would be expected to submit a statement explaining the demands he would be making of the student as an assistant. The same

reports will presumably have to be attached to any application for funds for the larger project, so that any tendency to minimize the student's contribution to the project will be counteracted. The two reports should allow the Canada Council to assess division of a fellow's time between graduate work and work as a research assistant.

This proposal can be illustrated by two hypothetical examples. If the student's work as a research assistant coincides exactly with what he would have to do to produce a thesis - which would be the ideal arrangement - half of the student's fellowship should be charged to the budget of the research project. If the work as an assistant bore no relation to his thesis, the student would receive the full salary of an assistant from the budget of the research project and during this time would not receive any fellowship funds.

This distinction between research as a doctoral candidate and research as a research assistant will be helpful to graduate students and will protect them against being used as cheap labor for a professor's research project. It will also have the advantage of helping the university to distinguish in its budget between the costs of graduate training and the costs of graduate research.

The regulations we have proposed for teaching and research assistants will probably result in university teaching and research becoming less dependent upon graduate students. If teaching or research assistants are to be paid the going rate for their work whether or not they are graduate students, there will be less incentive to rely on master's or doctoral candidates. At some universities there is already a special category of instructors responsible for supervising laboratories or meeting students in groups for drills or discussion. A special category of research technicians is also emerging as the amount of research in the humanities and social sciences increases. These are often individuals who have an MA or even a PhD, who have completed their formal education and have no plans to become a full-time university professor or an initiator or director of research projects. In the long run, the standards of university teaching and research will benefit more from reliance on these professional teaching or research assistants than on less-experienced and less-committed graduate students.

The same argument has led us to reject suggestions that there be postdoctoral fellowships in the humanities and social sciences. Such fellowships are designed to allow PhD graduates to continue full-time research for a year or two after the completion of their thesis and so postpone the time when they will be diverted from research by teaching duties. Postdoctoral fellowships are well established in the natural sciences but are still unusual in the humanities or social sciences, and it would be inappropriate to encourage them.⁶ Students who have just completed a PhD should be eligible for special grants which would enable them to acquire knowledge or skills appropriate for their continued research, such as training in a related discipline or the acquisition of language or computer skills. Otherwise financial support for any research activities should come from a research grant, either as principal researcher or as a research assistant.⁷

Notes

1. Max von Zur-Muehlen, "The PhD Dilemma in Canada Revisited," Canadian Journal of Higher Education, Vol. 8, No. 2, 1978, pp. 49 - 92.
2. In Ontario the Advisory Committee on Academic Planning (ACAP) undertook an elaborate study of graduate programs, discipline by discipline, hoping that the universities would establish voluntary procedures for eliminating the weakest programs. The results have been disappointing. Even where discipline studies did identify weak departments the usual response of the university has been to question the report or to take steps to strengthen the department.
3. See, for example, the Reports of the Task Forces, University of British Columbia, Université de Montréal, Queen's University. The Council devoted 59.5 per cent of its total budget to doctoral fellowships in 1970-71 but only 42.9 per cent in 1973-74. The success rate for fellowship applicants scarcely changed over these years. The significant difference was the decline in the number of applicants. If we assume that marginal students were no longer competing, this would mean higher standards would be required for an award.
4. A Commitment to Excellence, Report of a Task Force on Graduate Studies and Research in the Humanities and the Social Sciences, commissioned by the Canada Council's Commission on Graduate Studies in the Humanities and the Social Sciences, Kingston, Queen's University, 1975, p. 48.
5. See Section One, Chapter VII.
6. Max von Zur-Muehlen, Post-Doctorals in Canada in the Mid-Seventies, Secretary of State, mimeographed (August 1975).
7. Disciplines such as mathematics and psychology, which have some affinities with the natural or medical sciences, may require special consideration. For these disciplines it seems likely that research grants can meet their needs.

III RESEARCH

1. The Level of Funding for University Research

Much of the debate in recent years on university research has focused on the two related issues of the financing of this research and the purpose of research. University research in Canada is largely financed by governments and will be in the future. The issue here, therefore, is not the source of funds but the amount. How much can or should governments invest in university research? The answer to that question is closely linked to the second issue, the purpose of this research. Governments establish their own priorities, and these priorities are based on political judgments. The extent to which university research will be funded will depend on the extent to which it coincides with government priorities. Universities can influence the funding decisions by adapting their research to conform to these priorities and, at an earlier stage, by participating in the political process and helping to establish these priorities.

University spokesmen have tended to assume that the purposes of university research are almost self-evident and that this research should obviously have a high priority. The Association of Universities and Colleges of Canada, for example, in a brief to the Prime Minister of Canada and the premiers of the provinces in 1975, spoke of the need to develop "a national university policy", but even before such a policy was developed it felt able to recommend an immediate increase in federal funds for university research. It so happened that the need for these increases was less apparent to the federal government, which had frozen these research funds and, because of inflation, had therefore effectively reduced its research assistance.¹

We see no simple way to resolve such differences. As we already pointed out, there is a necessary and desirable tension between the interests of science and the interests of society. Scholars must articulate their needs and insist on terms which are consistent with scholarly research, but they must realize they are participating in the process of formulating government policy. To be effective they must present their case clearly, recognizing and responding to other social priorities as far as their scholarly principles permit. Their success, as measured by the money provided for

university research, will depend only in part on the presentation of their case. It will also depend upon the demands from other sectors of society, on the priorities adopted by governments, and on the governments' view of the contribution which university research can make to their social goals. This political process is made even more complex because universities do not have a monopoly on research and because, in our federal system, research funding comes from both provincial and federal governments.

We do not believe that there are objective criteria by which universities and governments can determine the total amount to be spent on university research. A fixed sum, even if it was adjusted to compensate for inflation, would soon be too much or too little because the needs of science and of society are not static. Some academics have suggested that it would be preferable to fix government research expenditures as a percentage of the gross national product. This does have the advantage of permitting a rising level of investment in research without the uncertainties of the political process. But if there is some correlation between scientific research and productivity, it might be more logical to increase research expenditures when the gross national product declines. Even if governments were prepared to commit themselves in advance to such a formula, there would be plenty of opportunity for controversy. What would the percentage be? What would be the share of the federal and provincial governments? How would the research funds be shared among the natural sciences, life sciences, social sciences and humanities? What should the balance be between the imprecise categories of fundamental and applied research or free and mission-oriented research? How are we to decide what proportion of research funds should be invested in university research?

The question of how much money Canadian governments should invest in research goes beyond our terms of reference and our competence. The answer at any given time will be the sum of a number of political decisions, and the sum will change as the political process evolves. We have already explained why we believe that research will make an expanding contribution to our collective welfare, and why university research will be an essential component of this research. To that extent we are already participating in the political process. There will be a wider understanding of the nature

and the potential of university research if Canadian universities can define more clearly what the research role of the universities should be. If universities can agree on what "university research" should encompass, they will then be in a better position to claim their appropriate share of available research funds. They will, at the same time, be participating in the political process by which the total investment in research will be determined.

2. Universities and Contract Research

Research projects, especially in the humanities and social sciences, do not fit neatly into such categories as fundamental or applied research, frontier or contemplative research, free or oriented research.

For an individual university, these categories may be less important than other factors in deciding whether a research project should be considered. We refer the reader back to our earlier discussion of this problem and our conclusion that:

For any specific project, university research administrators must first determine whether it is scientific research, i.e. a rational analysis of causal or functional relationships between phenomena and then, whether the project is compatible with policies of the teaching unit and faculty.²

This conclusion deliberately does not include any reference to financial factors. Every decision on research must involve some attempt to correlate estimated costs and benefits, and to ignore costs would be financially irresponsible. If universities must be cost-conscious, they must also resist any temptation to be unduly influenced by financial benefits. For example, a university might be justified in contracting to undertake a marketing research project but it should justify the undertaking on the academic merit of the project, including publication of the findings, and because the research would complement the teaching or research interests of the faculty. It should not undertake such a project merely because it would be financially profitable. In assessing the potential benefits of any research project, the first requirement must be that the project will serve the university's research objectives.

The relationship between academic objectives and costs may be better understood if we begin with contract research, which some outside agency

pays a university or a faculty member to undertake. Most Canadian universities do not have an explicit policy relating to research contracts, especially in the humanities and social sciences, because these contracts have not been large or numerous. The demand for contract research, however, is likely to increase, especially in the social sciences. The increased opportunities for contract research will raise fundamental questions about the scientific and social objectives of university research as well as the obligations of faculty members as university employees. Contract research, with its financial incentives, may compromise the commitment to scientific research and the research priorities of a university. Each university needs to agree on its research priorities and to establish administrative procedures to determine whether proposed research contracts fall within the institution's guidelines.

The difficulties posed by the "make-or-buy" policy of the federal government will serve to illustrate the problem. In 1973 the federal government adopted the policy of contracting out as much of its mission-oriented research and development as possible to private industry. Universities became involved because in some cases the only available experts were employed by a university, and because in other cases federal departments converted a program of university research grants to a contracting program in order to include a contribution to the overhead costs of the research.³ This federal program has been confined largely to the natural sciences but the experience has some lessons for all university research contracts. In September 1976, the Minister of State for Science and Technology announced that the "make-or-buy" policy was to be extended to include certain activities in the humanities and social sciences.

The Department of Supply and Services, which negotiates these contracts, has signed contracts almost exclusively with university administrations rather than with individual professors. Even in the case of contracts with private companies employing university professors, the Department has arranged regularly for the prior approval of the university administration. University administrations have a right to be informed and in many cases are the most appropriate agents for negotiating such contracts, because the

university will frequently be responsible for many of the indirect costs such as overhead, equipment and supplies and secretarial services.

Even more important than the financial terms, however, are the academic aspects of the contract. The university has a responsibility to decide whether the research project is acceptable, as a public service or as scholarly research, and whether the terms relating to confidentiality or access to the findings conform to university policy. The university should also decide whether it is consistent with its own academic or research orientation to have a professor or a group of professors involved in this project. Each university in Canada should have an officer or a committee to take the responsibility for assessing the academic validity of any proposed research contract involving university personnel, assessing also the appropriateness of this contract in terms of the university's research objectives and, finally, ensuring that the financial interests of the university are protected.

We recommend that each university establish procedures to assess the academic validity, the relationship to the university's research objectives and the financial terms of all research contracts involving university personnel.

The procedures favored by the Department of Supply and Services seem so sensible that they should be adopted by all agencies negotiating research contracts. We make this a specific recommendation in the case of dealings with any federal agency.

We recommend that the federal government inform the university administration prior to the signing of any contract involving university personnel and that whenever possible it should negotiate directly with the university administration.

These contracts should include the payment of all indirect as well as direct costs incurred by the university personnel and the university itself, including full remuneration for the principal investigator. It would obviously be unfair to potential competitors if the contracts did not include such costs and, as a purchaser of research, it is in the long-range interests of the federal government to encourage competition from industry and private entrepreneurs. Also, the universities should be reimbursed for all indirect costs.

We recommend that any federal contract involving university personnel should include all indirect costs and also remuneration for the principal investigator.

The inclusion of indirect costs will create difficulties for university administrators. At present no Canadian university can arrive at more than rough estimates of such costs, which vary widely depending on such factors as the size of the project, the use of space or the need for special equipment. A fixed percentage may be acceptable for small contracts but for larger projects the amount involved is significant and the university administrators or the federal negotiators will need more accurate figures. Over a period of time the universities will be obliged to improve their accounting procedures and provide more reliable estimates of indirect costs. If the provincial authorities want uniform accounting procedures throughout the province, the universities will have to introduce even more radical modifications and may need financial assistance from the province to make the necessary changes. Many will regret the consequent extension of the university bureaucracy, but we see it as necessary and inevitable.

The question of payment to the principal investigator will pose a different sort of problem to the university administration. Assuming that the investigator is a full-time employee of the university, it can be argued that the time given to a research contract is time taken from normal duties, in which case the university might legitimately deduct the equivalent earnings from his or her regular salary. On the other hand, the investigator may use weekends and holidays for outside work or may argue that the work will enhance his or her contribution to the university as a teacher and as a director of research and that he or she should therefore continue to receive full university salary, regardless of supplementary employment. This is a problem between the university as employer and the professor as employee, and we have no recommendations to make on this question of supplementary income. At the university level, the administration and the faculty may agree on university guidelines or they may prefer to negotiate each case individually. Regulations may become necessary at the provincial or regional level if divergent university patterns cause friction. In any case, an amount should be included in the contract to cover the remuneration

of the principal investigator for the time spent on the project, because this is one of the costs of the project. A separate arrangement between the university administration and the investigator may determine whether this amount goes in full or in part to the investigator, but this will not affect the terms of the contract between the university and the federal government.

The procedures we have outlined also seem to us to conform to the logic of emerging provincial or regional university systems. The federal government is, in effect, buying information from a provincial agency. It is only right that it should pay the full cost. Provincial authorities do not need to be directly involved in the negotiation; as long as the university is properly reimbursed for its work, the interests of the provincial system are protected. As a courtesy, we would expect the federal government to inform the provincial authorities of all the details of contracts with provincial institutions.

3. Sustaining and Development Grants

The federal departments and federal agencies, in addition to research contracts, have in the past endowed chairs, provided research funds and given development grants to selected universities in areas relating directly to federal responsibilities. With the emergence of provincial or regional university systems, federal arrangements with an individual university may disrupt planning and coordination at the provincial or regional level. Federal support for an institute of international affairs at one university might, for example, run counter to provincial plans for developing international studies at another institution. Some provincial governments have already objected to what they see as unwarranted federal intervention in a provincial field, and such objections will almost certainly become more general and more forceful as the provincial or regional systems develop. Already provincial governments can exercise enough control over a university's budget to nullify the effects of any direct federal grants, if they choose to do so. The pattern of direct federal arrangements with individual universities will have to be modified.

Federal departments or agencies may still consider it desirable to strengthen specific departments, faculties or institutes and may still be

prepared to make federal funds available. The choice will almost always fall on a university that already has an established reputation in the field. Provincial authorities, rather than object, will likely welcome this federal support. Provincial consent, however, should not be taken for granted. The appropriate provincial authority should be privy to any discussions about sustaining or development grants and should be a signatory of any final contract.

We recommend that all federal sustaining or development grants to individual universities should be negotiated in conjunction with the appropriate provincial authorities.

The starting point for the federal government will be to assess its own needs. Does External Affairs, for example, believe that it needs more graduates or more specialists or more extensive library holdings in Islamic studies than Canadian universities can now provide? Does the Secretary of State see a need for more translators or more research facilities in linguistics? Would the federal government benefit from a research institute on Canadian Indians or on penology? If the answer is in the affirmative, the federal authorities should then decide which universities could best fulfil its requirements. The initiative might equally well come from a university or from a provincial authority. In any case the negotiations would involve the university, and the provincial and federal governments, and the final agreement should be consistent with the interests of each.

The involvement of the federal government will sometimes extend beyond support for an existing department or institute. It may see the need for graduate programs or research institutes which are so specialized or so expensive that no provincial or regional system is prepared to provide them. A number of provincial or - in the case of the Maritimes, regional - authorities may be interested in a cooperative venture. It is difficult, however, for any provincial or regional authority to finance an institution located in another province or region.

Here the federal government may play a creative role. In negotiating with the representatives of the interested provincial or regional authorities it may make an essential contribution to the project. Its assistance may be a financial contribution to provide capital and equipment or an annual grant to

defray the costs of transportation and communication in order to make the centre more accessible to the other provinces. Whatever the form of its assistance, the federal government's aim should be to contribute to cooperation between provincial systems.

Another situation occurs when the federal government sees the need for a sustaining or development grant in a field in which universities in two or more provincial systems have already made some investment. The federal government will be able to decide what level or what programs of graduate training and research it would like established. Rather than choose the university unilaterally and begin negotiations with the appropriate authorities, it should give all interested provinces the opportunity to present their claims and to discuss the terms on which the provincial institution would meet the federal requirements. These negotiations will not always be easy, because some provinces and some universities will have to be disappointed. The federal government, however, can minimize these frustrations by making it clear in advance what it wants and how much it is willing to invest.

4. The Canada Council and University Research

The Canada Council has made an enormous contribution to university research. It is difficult to realize how little support there was for research in the humanities and social sciences in the days before the Council existed. In most years professors could not expect to be relieved of any teaching; the time available for research was the time left after they had fulfilled their other responsibilities. They might be able to look forward to a sabbatical after six or seven years, but leave was likely to be at half-salary and it required long-range budgeting if the year was to be devoted to research. The National Research Council existed, but there were almost no public or private endowments in the humanities and social sciences to provide faculty with an income while doing research. Canadians were eligible for fellowships from American foundations such as Rockefeller, Ford and Guggenheim but, within Canada, public and private institutions behaved almost as if research in the humanities and social sciences was a hobby in which professors could indulge on their own time and at their own expense.

The amount and the quality of research done in the pre-Canada Council era attests to the importance which social scientists and humanists gave to research and the personal sacrifices they made.

University research in the humanities and social sciences is no longer the orphan it was. The Canada Council was a major breakthrough, for it marked the recognition by the federal government that this research was more than a hobby, that it was a constructive and creative social activity. The Council made it possible for some graduate students and some faculty members to win fellowships that would free them for an interval of full-time research. The Council was also prepared to pay for the research costs of promising projects and so made it possible to undertake research which in the past would have been inconceivable. Fellowships and research grants were only a beginning. The Council's university library grants and its development program were a response to the need to improve the universities' research facilities. Travel grants for faculty to attend conferences, publication grants to disseminate research findings, as well as encouragement of interdisciplinary research or of research on topics of special Canadian concern were all logical extensions of the initial decision that the federal government should support research in the humanities and social sciences.

The Canada Council still plays a very important role in the funding of this research but there are now supplementary sources of financial support which did not exist in the pre-Canada Council era. Federal and provincial governments have significantly increased the level of university support and this has permitted universities to improve research facilities, to reduce teaching loads slightly and to provide some university funds for research expenses. In addition, some provincial governments have created their own foundations to finance research. The opportunities for contract research in the humanities and social sciences are also more numerous now. The Canada Council is the first choice of many applicants for research assistance, but it is no longer the only choice.

The primary objective of the Canada Council - raising the standards of training and research in the humanities and social sciences - is as valid today as it was when the Council was established. Changes over the last two decades, however, necessitate some modification of the Council's programs.

Individual universities are developing their own research policies and the emergence of provincial and regional university systems means the development of provincial or regional research policies. In addition, the federal government has contributed to university research by research contracts, special departmental programs and less directly by its financial contribution through the Federal-Provincial Fiscal Arrangements Act. If the Canada Council or its successor is to contribute to higher standards of training and research in the humanities and social sciences in the future it must play a role which is consistent with and complementary to the policies of the other agencies which are also contributing to this objective.

How much money should the Canada Council or its successor have? There is no direct answer to this question. The amount a society invests in research is a political decision, arrived at by balancing the costs and assumed benefits of research against the costs and benefits of other social expenditures. In a federal system the total public expenditure on research is the sum of the decisions at the federal and provincial levels. Even at the federal level, the investment in research covers a wide range including research within the public service, research contracts with private industry or universities, fiscal agreements with provincial governments, as well as the funding of the National Research Council, the Medical Research Council and the Canada Council. No useful purpose can be served by a formula or equation which purports to weigh all the relevant factors and by some legerdemain to identify the annual sum which the Canada Council or its successor should receive.

There are guidelines which can be suggested. A high level of university research depends upon long-range planning: by the individual researcher, who must develop skills, budget time, collect research material and data and arrange for whatever assistance will be needed; and by the university, which must build libraries, provide research facilities and free researchers from teaching duties at the appropriate time. There must therefore be assurance that the support for university research will not fluctuate unpredictably from one year to the next. The Canada Council or its successor should be assured of a minimum sum over a three- or five-year period, with some preliminary warning if the level of funding is to be significantly modified.

Federal support for the research councils should bear some relation to the federal expenditure on mission-oriented or contract research. Any increase in this federal expenditure will indicate an increasing reliance on research or a higher priority for research. The level of oriented research, whether it is done within government departments or contracted out to private institutions, depends upon the knowledge and skills of the researchers. Governments which look to research to assist them in formulating policy will rarely have the time or patience to develop special knowledge or skills. The normal pattern is to apply the existing knowledge or methodology to the specific problem. University research, however, must always reflect the priorities of academic objectives and the research orientation of the institution. This means that the research program of the university must be more than the sum of available research contracts. If universities are to contribute to knowledge, to develop improved research techniques and to provide up-to-date graduate training, there must be money available for free research or for university research which is an integral part of the training program. If the federal government increases its reliance on applied research, it should increase its contribution to the development of the special knowledge and skills on which this applied research must be based.

The total budget of the Canada Council or its successor will in the long run depend to a great extent on its reputation, and this in turn will be based on the effectiveness of its policies to improve the standards of training and research. If it retains the confidence of academics, of provincial authorities and of federal authorities, its requests for funds will be listened to with respect, and if in some year the federal grant seems inadequate, the new Council will be able to rally support for its request and try to modify the government's decision. The present Canada Council already has a well-established reputation for impartiality in its awards of fellowships and research grants, for its commitment to high standards of scholarship and for championing the interests of the humanities and social sciences. It should be the concern of the Council and its successor to maintain this reputation and strengthen its position when the sources of funds for university research are becoming more diversified.

The Canada Council has always assumed that high standards of scholarship depended ultimately upon individual scholars. Doctoral fellowships has been a major program. The emergence of provincial or regional university systems will undoubtedly lead to some provincial or regional regulation of doctoral studies. In our discussion of graduate training we have already suggested provincial or regional procedures for admitting and for financing doctoral candidates. We also recommended that the Canada Council or its successor should modify its doctoral fellowship program to conform to these procedures and should use the provincial ranking of candidates for its fellowship competitions, and that the Council fellowships should be accompanied by payments to the host university to cover the costs of the student's training.

The Canada Council's program of research grants should also be modified wherever necessary to be consistent with emerging provincial or regional systems. The competitive system, with evaluation by experts in the field, is still the best method of awarding research grants. Provincial or regional authorities will share with the Council or its successor the objective of fostering high academic standards and will presumably have no objection to federal research grants awarded in this way. At present, however, the research grants of the Canada Council do not cover all the costs of research. The university must meet the indirect costs and, to the extent that the research project encroaches on a professor's commitments to the university, it must also pay the principal investigator's salary. A research grant can affect the allocation of funds within a university budget; a large research grant for a project in archaeology, for example, will involve indirect costs and absorb university funds which might have gone elsewhere. This may interfere with the planning or priorities established for that university at the provincial or regional level. To avoid any disruption of the provincial or regional objectives, all indirect costs should be included in the Canada Council research grants.

We are not impressed by the argument that the indirect research costs to a university are paid for out of the provincial grant, that under the Fiscal Arrangements Act the federal government paid half of these costs and that, therefore, the Canada Council or its successor has no obligation to reimburse universities for indirect costs. The argument ignores the emergence of

provincial or regional systems of post-secondary education and the responsibility of provincial or regional authorities to establish priorities, and is less convincing now that the Established Programs Financing dissociates the federal government from any shared costs. We have already recommended that all federal research contracts with universities should include indirect costs. Federal research grants should follow the same pattern.

We recommend that research grants awarded by the Canada Council or its successor should cover all indirect costs to the university and also an amount equivalent to the salary of the principal investigator.

In our discussion of federal research contracts we have referred to some difficulties relating to the assessment of indirect costs and to the allocation of the amount included as salary for the principal investigator.⁴ The procedures adopted for research contracts will be applicable to research grants.

The contribution of the Canada Council or its successor to research in the humanities and social sciences should come to terms with the increasing emphasis on "relevant" research. It is easy to justify an investment in research and development which promises to produce direct economic advantages. From this it seems a logical step to give preference to research which relates to Canadian concerns or Canadian problems in some way. The study of transportation by pipelines in permafrost is one example; in the social sciences, preference may go to studies of the effect of modern technology on native peoples.

There are serious dangers, however, in the use of "relevance" as a criterion for awarding research grants. The most immediate danger would be a preference for applied research. A project which promises to produce applicable results becomes "relevant" almost by definition. It is generally agreed, even in the natural sciences, that the significance of a research project cannot be reliably predicted, and that the most original and creative projects are usually classified initially among the least "relevant". The term is even less useful as a criterion for assessing research projects in the humanities and social sciences. Is a study of Shakespeare more or less "relevant" than a study of an obscure Prairie playwright? Are some human values or some forms of human behavior more relevant for Canadians than others?

A more subtle danger is that any consensus on what is "relevant" is likely to reflect transient concerns or assumptions of the moment. These will already be reflected in the "problem-oriented" or "mission-oriented" research sponsored by governments. Research projects initiated independently by university professors may also be stimulated by current issues or contemporary concerns, but there will at least be the possibility of wider-ranging research if "relevance" is not a criterion for evaluating proposals. There is also the risk that a consensus on this concept will implicitly reflect current social assumptions. One of the characteristics of university research should be a concern for social values and a willingness to question social policies and social norms. An insistence on relevance as a criterion may inhibit this questioning. We therefore suggest that this concept should be dropped from the criteria suggested to the appraisers of Canada Council research applications.

We are not objecting to research related to Canadian concerns or Canadian problems. Nor are we objecting to the federal government giving priority to such research. But if the federal government decides that research on bilingualism or native peoples is especially "relevant," it should encourage such research explicitly by contracts or special research programs, initiated and administered by the most directly affected departments. This research should not be administered by the Canada Council or its successor because the Council should concentrate on the improving academic standards generally. Any other federally-imposed priority would compromise this objective. Instead of relevance the Council and its successor should be concerned with scholarship. If the definition of scholarship stresses the analysis as well as the collection of data, we are convinced that the Council or its successor will be fostering higher standards of research and, in the long run, this will be more relevant to long-range Canadian interests than transient or faddish issues which may for a time seem more "relevant."

We also wish to draw attention to the needs of a special category of researchers, that of the younger scholars in the humanities and social sciences. The National Research Council has a well-established program of funding the research of promising junior scholars to give them an opportunity to prove themselves. The Canada Council has never had an equivalent program.

Junior scholars must compete with senior scholars for Canada Council research grants; the assessment procedures and the assessment criteria are the same. Senior scholars, however, have the advantage of an established reputation and a list of publications to their credit, and there is a strong possibility that procedures discriminate against the younger scholars in the competition for research grants and leave fellowships. This discrimination may become more serious if research grants include the researcher's salary and indirect costs and the number of research grants is thereby reduced. The National Research Council program may not be appropriate for young scholars in the humanities and social sciences, where research is less likely to depend on laboratory equipment and the contribution of graduate students. The Council or its successor should be alert to the possibility of discrimination. It should be prepared to introduce a special program or a separate category of research grants and leave fellowships as soon as there is any evidence of this discrimination.

The Canada Council's commitment to scholarship has meant an emphasis on doctoral and senior fellowships and on research grants, but it has also assisted research in other ways. It has provided library grants and development grants in order to improve research facilities in Canada, and it has given financial support to academic conferences and scholarly publications to improve communications between researchers. The Council and its successor must continue to be concerned about research facilities and scholarly communication. The emergence of provincial or regional university systems will have some bearing on what the actual policies of the Council or its successor should be.

The problem of providing adequate library facilities will serve to illustrate this point. We have already commented on the crucial importance of library resources and services for research in the humanities and social sciences, on the inadequacy of most university libraries in Canada and on the alarming decline in library acquisitions in recent years.⁵ The Canada Council or its successor, because of their commitment to fostering graduate studies and research in Canada, should contribute in some way to improving the library holdings in Canada and in facilitating scholarly access to them. The debate must focus on what form this aid should take.

There are some attractions to the idea of Council support for the acquisition or strengthening of specialized library collections. Even one of the smaller university libraries can have a unique collection in a limited area, whether it is Restoration poetry or public opinion survey data. In theory, at least, a specialized collection permits a high standard of graduate training at small universities but at the same time can benefit scholars at other Canadian universities who can use the collection by visiting the library or by inter-library loan. It is argued that a Council program of support for specialized collections would therefore foster higher standards of graduate training and research at smaller universities while at the same time augmenting total library resources in Canada.

Experience, however, suggests that a policy of supporting specialized collections at a large number of university libraries would be wasteful and inefficient. A narrowly specialized collection is not an adequate basis for graduate training or research. Restoration poetry, to refer to our example, must be seen in the context of Restoration literature and in the context of the political, social and intellectual history of the period. Only a major library can acquire and sustain collections broad enough to be designated research collections. The blunt conclusion is that not all universities can become major centres of graduate training and research.

An alternative policy would be to support a few major libraries instead of dispersing federal aid to a large number of university libraries. There is plenty of evidence to show that this concentration of library resources is already an established pattern in Canada. University libraries already varied greatly in size at the beginning of the 1960s and, during the period of expansion over the next decade, the differences became even more marked. The rank order remained much the same, but the dominant position of the major universities was accentuated. The Council, it is argued, should reinforce this pattern and should direct its library support to those institutions which have already established themselves as the major research libraries in Canada.

Federal aid to university libraries, however, cannot be based solely on the criterion of size. We are not dealing with an integrated system of Canadian universities in which a federal contribution to one university is indirectly of benefit to them all. The University of Toronto library, for

example, is unquestionably the major research library in Canada and on that basis it could be argued that all the federal aid should go to Toronto. The holdings of the University of Toronto, however, are primarily for the use of the students and faculty of that university and secondly for the students and faculty of other universities in Ontario. It has no specific responsibility for researchers in other Canadian universities, and although out-of-province scholars may study there or borrow from it on inter-library loan, its role in this respect is little different from that of major libraries in the United States. Federal aid which was restricted to the University of Toronto would be a regional rather than a national policy. Even the inclusion of the second rank of universities, based on size of library holdings, would not resolve this difficulty. This group as we have seen, includes the universities of Montreal, British Columbia, McGill, Alberta, Western Ontario, Manitoba and Laval.⁶ It does not include a single university from the Maritimes or from Saskatchewan.

The Council or its successor should contribute to the cost of library acquisitions and scholarly access to library holdings. This aid, if it is to be effective, should go to the major university libraries in Canada, because these will be the major centres of graduate training and research. Moreover, the size of individual university holdings is not a sufficient criterion. An appropriate policy must recognize that universities are associated in provincial or regional systems, that the Council's role should be to supplement the provincial or regional measures and to foster cooperation and coordination between the systems. On the basis of these assumptions, it is possible to suggest an appropriate approach for the Council in support of library acquisitions and scholarly access.

In the case of library acquisitions, there are some volumes and journals which are so much in demand that most universities or at least most of the major universities in Canada are likely to buy them. The responsibility for financing these acquisitions should be at the level of the university or the province. The concern of the Council is to encourage the acquisition of books and journals above this minimum, as long as they are likely to contribute to graduate studies or research. A sustaining grant to specified university libraries is not likely to be effective in the long run because it

may be merged with the general acquisitions budget or, if it is kept rigidly separate, it may lead to the purchase of books and journals for which there is no scholarly demand. A more suitable approach would be to establish an annual union list of all acquisitions of books and journals, to identify those items acquired by only one or two university libraries and to reimburse those universities for a portion of their outlay.

To illustrate this approach, let us assume that the Canada Council or its successor has established a specific amount as aid for library acquisitions. It will then establish the total cost of those books or journals in the humanities and social sciences acquired by only one university, by two universities and by three universities; and then, the rate of reimbursement for each category - possibly one-half, one-third and one-fifth - which will absorb its library acquisitions budget. Most of the grants will go, as they should, to the major university libraries, because their acquisition lists will be longer. Smaller universities will benefit to the extent that their purchases in a specialized or regional topic are not duplicated by other universities. Federal aid will go to those universities whose acquisitions have gone beyond the standard requirements of a university or of a provincial or regional system. The program would therefore be consistent with our assumptions about the appropriate role for the Council.

In the case of scholarly access, the Canada Council or its successor should be primarily concerned with facilitating access by a student or faculty member to library holdings outside of his own university. Travel to another university and subsistence during the stay is one response. Faculty members can always apply for a research grant. Access to a major university library, however, should not be limited to professors working on a specific research project. Travel and subsistence are also justified for faculty members who are preparing for a graduate seminar or are at the planning or designing stage of a research project. We have already stressed the importance of the development of a network of communications for scholars in the humanities and social sciences, and one contribution to this is to facilitate visits to a major library. Doctoral candidates could have the costs of such visits included as research expenses in their doctoral fellowships.

The major university library in Canada is at the University of Toronto, and if visits by scholars are encouraged, as we believe they should be, the University of Toronto library may find that the increased demand on its resources is appreciable. We therefore propose that any grants for visits to major research libraries should carry with them an appropriate sum for the library to cover its indirect costs. Canadian scholars have benefitted greatly from access to research libraries outside Canada, in the United States and in Europe, which have some resources no Canadian library can duplicate. Grants for visits to foreign libraries should therefore include an equivalent sum to be paid to these libraries in return for their services.

It will sometimes be more efficient to send the books and journals to the scholar by inter-library loan. There again the procedures are adequately developed. What is needed is a program by which the Canada Council can contribute to the efficient functioning of inter-library loans. One of the constraints on inter-library loans is that the lending university not only deprives its students and faculty of the use of a book for some weeks, but the service it provides involves institutional costs in time and money. The larger institutions accept inter-library loans as a duty, but they are naturally reluctant to see any increasing dependence on these loans. It was estimated that in 1974 the average cost to libraries in the United States for each volume lent on inter-library loan came to \$7, including direct costs and estimated administrative costs. For the University of Toronto library alone, this would mean a cost of over \$200,000 for the 30,000 items it lent in 1973-74.⁷ Since then costs have risen and the requests for inter-library loans have increased. The burden on major lending libraries is significant enough to lead to serious consideration of charging a user's fee. There are also hints that prolonged delays in lending the requested books are deliberate and intended to discourage borrowers.

A constructive Council policy on inter-library loans would be a policy of reimbursing lending institutions for their costs. The program might be restricted to inter-library loans which crossed provincial boundaries, in keeping with the federal role of fostering cooperation and coordination between provincial systems, although it might also include the cost (or a

portion of the cost) of loans to universities within the same province as consistent with the federal interest in encouraging higher standards of research. The Council might even add a bonus to encourage prompt service. Some way to reimburse university libraries in the United States such as Harvard, on which Canadian scholars rely heavily, would also be appropriate. It would be less appropriate to introduce a program to reimburse borrowing institutions for their costs because universities might then have less incentive to ensure that their own libraries met the minimum research requirements of their own students and faculty. If inter-library loans are required for a specific research project, however, and this project is financed by a contract or grant, the costs to the borrowing library should be included in the contract or grant as a legitimate expense.

This discussion of the possible policy of the Canada Council or its successor for university libraries is intended in part as an illustration of how the Council should approach its responsibilities. There are many ways in which the Council can contribute to the development and improvement of the infrastructure of research. We have already specifically adopted the recommendations in the Report of the Consultative Group on Survey Research.⁸ There is also the assistance already given by the Council to conferences and learned societies and to academic journals and publications. In every case the Council's objective should continue to be the development of higher standards of research in Canada. The Council will also continue to have a special responsibility for fostering contacts with international agencies and foreign scholars. Present policies should be reconsidered because of the emergence of provincial or regional university systems and the special federal responsibility for fostering the cooperation and coordination of these systems. As our discussion of library policy suggests, there will still be ample scope for the Council or its successor to make a significant contribution to graduate training and research.

5. Federal Research in Higher Education

Our experience as a Commission has also alerted us to the importance of research in the area of graduate studies. Some years ago the Economic Council of Canada stated that the "small amount devoted to research in education is woefully inadequate."⁹ More recently the OECD report of 1976 concluded that

the situation had not improved and that "research is certainly one of the weakest areas of the Canadian educational system."¹⁰ These conclusions were confirmed by our own experience, because we found it necessary to start from the beginning and to collect, organize and analyze the data we needed.¹¹ Even now it is easy to point out areas in which we are woefully ignorant. For example, we would have liked to know the influence of socio-economic factors on applications for admission to graduate studies, full-time and part-time. We would have liked to know more about the factors which led graduate students to study abroad and about the factors affecting the time required to complete a degree. We would have liked to know more about the investment in teaching and research by governments, private enterprise and universities. It is sobering to realize that we have no assessments of the quality of our graduate training, no assessments of whether this training is appropriate for our manpower requirements, and no assessments of the standards of our university research, of its relevance to teaching or of its contribution to other areas of social concern. In short, we spend some four billion dollars on post-secondary education, but we do remarkably little to discover how this money is being spent.

The provincial governments have a major responsibility for research in this area, because they have a major responsibility for formulating post-secondary educational policy. The federal government should also accept some responsibility, however, because it relies on the skills and knowledge which post-secondary education produces and because it must foster the coordination and the cooperation of the provincial systems in areas where the provinces cannot act alone. Unfortunately, this federal perspective is in danger of being overlooked. The Canada Council has relied mainly on special task forces or commissions, the Economic Council has shifted its interests away from education and the Department of the Secretary of State has reduced its commitment to educational research. Unless the trend is modified, the national dimension of higher education will almost certainly be neglected.

Federal support for research in the area of graduate studies need not be large but it should be sustained. The magnitude of the topic makes ad hoc studies inadequate. A modest research institute is needed. We are not sure where such an institute should be located. It seems likely that a federal department would be an uneasy home, because the institute would have to have

close relations with provincial agencies and because its research would touch on aspects of provincial jurisdiction. The AUCC might be a more appropriate agency, because it is more independent of the federal government and it already has an excellent research library. In the past, however, the AUCC has not developed a sustained research program and there may be institutional reasons for this pattern. An institute attached to a university is another possibility, but the interests of such an institute and a university may not always be congruent. The new Social Sciences and Humanities Research Council may be the best location for the research centre. It has a direct interest in identifying the emerging patterns of graduate training and research and in assessing the efficacy of fellowship and research programs, and so will need to ensure that the necessary research is being done. The need for sustained research on higher education in Canada seems to us undeniable. It also seems clear that the federal government should contribute financially to this research.

Notes

1. For an example of diverse views on federal funding, see the discussion on graduate studies and research in AUCC, Proceedings of the Seminar on Canadian Universities, held at McGill University, March 1976.
2. See Section Two, Chapter V.
3. See "The Make-or-Buy Policy 1973-75", Ministry of State for Science and Technology, November 1975, for data on contracts with universities and university staff.
4. See Section Two, Chapter VI.
5. See Section Two, Chapter V.
6. See Section Two, Chapter V.
7. See Appendix J, Report of University of Toronto Task Force.
8. See Section Two, Chapter V.
9. Economic Council of Canada, Sixth Annual Review (Ottawa, 1969), p. 167.
10. Ibid., p. 101.
11. This is not intended as a criticism of Statistics Canada, the Department of the Secretary of State, the Province of Quebec or the universities which generously assisted us by collecting and organizing data at our request. We are also under an obligation to individuals such as Dr. Max von Zur-Muehlen, whose contribution is apparent from the references in this report to their studies. The fact remains, however, that there is no institution which conducts sustained research on higher education in Canada.

IV BICULTURALISM

Bilingualism and biculturalism are of special concern to the federal government, because they are linked to the objective of national unity. Policy in this area is not a federal monopoly - provincial governments also have a concern for national unity - but the two cultural groups are more frequently associated at the federal level. The principle of equal partnership, however, is not always easy to translate into practical measures; as the Royal Commission on Bilingualism and Biculturalism pointed out, uniformity must not be confused with equality, and where the two cultural groups differ in so many ways, there must always be compromises.

This is certainly true for graduate studies, where specialized programs are only viable if the university has the faculty and other resources and if there are enough students to justify offering the program. It will never be practical, therefore, to offer the same variety within graduate programs in French-language universities as that available in English-language universities, if only because there will be fewer students. The French-language universities, however, do face special difficulties at the level of graduate studies. There are unavoidable costs which even language training and translation will not overcome. Their libraries must acquire appropriate books and journals published in French and must acquire any relevant books and journals published in English. A great deal has been done in recent years to improve the facilities of the French-language universities and to expand their libraries and research resources. The cost of providing comparable graduate training or research facilities will always be higher at a French-language university in North America.¹

We are convinced that a commitment to equality of opportunity in graduate training would be unrealistic. There are no measures which will show when the faculty or the library of two institutions are equal. A policy of "rattrapage" would be unworkable because no one could tell when French-language institutions had caught up. Some special steps, however, should be taken to compensate for the inevitable handicaps of French-language universities in Canada. We propose an almost arbitrary increment to every federal grant to a French-language university, whether it be a grant associated with a fellowship, for contract research or a Canada Council research grant.

We recommend an additional 10 per cent to be added to every federal grant or contract to a French-language university.

This additional sum should not be charged to the granting or the contracting agency because the agency would then be penalized whenever it negotiated a contract with a French-language university or made a grant to an academic at a French-language university. We suggest that the federal government authorize the Department of the Secretary of State or some other agency to pay this additional sum. This money will go to the university and not to the student or scholar and is intended to supplement the university's efforts to raise its academic standards and research facilities. The amount involved will depend on the university's success in attracting able graduate students or research personnel and so will ensure that the money goes to the most deserving institution. In the case of bilingual universities, the special grant would be made only for francophone students or research projects in French.

Note

1. See Section Three.

CONCLUSION

In these pages, we have focused attention on what we believe should be the federal role in graduate studies and university research in the future. Our recommendations are based on the assumption that the fundamental function of the universities will not be changed. They will continue to preserve, to transmit and to expand human knowledge and, in the humanities and social sciences, these activities will continue to involve scholars in social analysis and social criticism. Two major developments, however, make it necessary to adapt and modify the federal role in graduate studies: the increasing importance of research as an activity in its own right at Canadian universities and the consolidation of provincial or regional systems of post-secondary education. If Canadian universities are to fulfil their fundamental functions effectively in the future, the federal government will have to adjust the policies affecting graduate studies and university research in the light of these developments.

Most of our recommendations on federal policies or procedures were directed toward the Canada Council or its successor, the Social Sciences and Humanities Research Council, because of their primary concern for independent scholarly research and because this is the aspect of university activity most likely to be constricted by the developments in research and provincial control. The Council, we believe, should continue to support graduate studies. Its fellowship program, however, should be coordinated with provincial or regional programs at the initial stage and its renewal procedures should stress the thesis phase of the PhD as a research enterprise. At the research level the problem is to restore independent research to a position of financial parity with commissioned research within the university. Our major recommendation is that Council research grants should in future include an allowance for indirect costs and for the salary of the principal researcher. Our other recommendations and suggestions focused attention on the special contribution the federal government should make to French-language university research and to the coordination and support of library resources and various forms of scholarly communication.

In this report, we have attempted to describe the situation of graduate studies and research in Canada. Our recommendations, although not

comprehensive, are directed to the resolution of the problems identified, but there are a host of details and complications which will still have to be considered. We are convinced, however, that our recommendations and proposals outline what should be the essential thrust of future federal policies.

We have been much less specific in our recommendations to provincial governments, although we have proposed new PhD admission procedures within the provincial or regional systems which were linked with recommendations for the financing of PhD students. In most areas of graduate training and research, however, the responsible provincial or regional officials and the university authorities are better able to judge the needs of the system and the best means of achieving its objectives. Provincial governments will have to give much more support to free research in the humanities and social sciences than they have done. We have stressed the special role of the Canada Council and the new Social Sciences and Humanities Research Council in supporting free research when more and more research funds are directed to oriented research. Provincial governments cannot abdicate their responsibilities in this area. The emergence of provincial or regional university systems gives provincial governments greater responsibility to ensure the balanced development of universities, and the emphasis on oriented research means that provincial governments must also do something to redress the balance. In every province or region there should be the local equivalent of the federal research council to support free research in the humanities and social sciences.

Our recommendations will affect the finances of individual universities. Canadian universities have lost much individual initiative, and the prevailing pattern is for them to become increasingly integrated into a provincial or regional system. Some degree of individual enterprise, of competition and rivalry between universities within a province or region can still contribute to improving standards of graduate training. Under the existing system, individual universities compete for the best doctoral candidates by offering them attractive fellowships or teaching and research assistantships. Our recommendations for doctoral fellowships are designed to shift the emphasis from financial to academic incentives. The best PhD candidates will have scholarships, including payments to their universities of full tuition costs, and will be able to choose their universities on academic grounds. The

universities with the highest academic reputation should attract the best students.

Our recommendations in the area of research are also designed to counter-act the financial constraints which lead universities to encourage contract research and to make it easier for them to foster free research and to initiate research in areas where they have a special interest or special competence. Universities will no longer have to pay the indirect costs of research financed by grants from the Canada Council or its successor, and may not have to pay the principal researcher's salary while he is doing his research. Universities may be reimbursed for a portion of the cost of some library acquisitions. These financial arrangements will have only a modest effect on the total budget of most universities, but deserving universities will have additional funds under their control. These favored universities can then engage in healthy competition with other universities by using these funds to improve their research facilities or to support the research of their faculty. In the future, universities may allocate more money specifically for faculty research. We suggest special consideration be given to the initial costs of developing a research design and to the final costs of reporting on the project but do not make any specific recommendations. Some universities are already giving generous support to research, and each university is best able to judge for itself what form of assistance should be provided. Rivalry between universities can be creative if the rewards are for academic achievement.

At the university level, our recommendations are intended to give separate institutions a limited scope for individual initiatives. The growing dependence on public funds and the increasing commitment to planning for all post-secondary education has restricted university autonomy in recent years. Some autonomy is needed to foster academic variety and vitality within the emerging provincial or regional systems.

At the level of university departments, our concern has been to foster higher standards in graduate training and research in all disciplines in the humanities and social sciences. We are conscious of the differences between the humanities and the social sciences, and of the differences between disciplines within each category. In general over the next few years the social sciences are more likely to feel the impact of the increasing demand

for oriented research, and to that extent they will share many of the problems of the natural sciences. The humanities are in danger of being neglected because research in the humanities is not generally considered to be as relevant. Research councils and universities have a special responsibility for countering this neglect.

Despite the manifest differences between the social sciences and the humanities, their common characteristics and concerns should not be minimized. The academic interests of students and scholars are similar whether they are humanists or social scientists, and our recommendations for graduate training and research seem equally appropriate for both categories. The arrangements and procedures which we have proposed should foster higher academic standards in all disciplines and still permit enough flexibility to meet the special needs of each.

APPENDICES

APPENDIX I

1. Terms of Reference of the Commission
2. Role of the Task Forces
3. Composition of the Task Forces
4. Critical Path
5. Terms of Reference of the Task Forces
6. Proposed Guidelines for Discipline Studies
7. Acknowledgements

1. Preliminary Terms of Reference of the Commission on Graduate Studies in the Humanities and Social Sciences:

To enquire into and report upon the nature, objectives and efficacy of Canadian graduate studies in the humanities and social sciences and, without limiting this general aim, to examine in particular the trends and patterns of such graduate studies in recent years, and their future prospects, in the light of:

- the expectations of graduate students;
- the relationship of graduate studies to the development of Canadian universities and to advanced research;
- the employment opportunities for those completing such studies; and
- more generally, the contribution of graduate studies in the humanities and social sciences to the economic, social, cultural and political life of Canada.

2. Role of the Task Forces

The Commission has struck a task force at each of the following universities: British Columbia, Alberta, Toronto, York, Queen's, Montreal, Laval and Dalhousie.

The task forces will study some of the questions that the Commission has been invited to examine and make recommendations. The reports of the task forces will become the property of the Commission, but the Commission will be responsible only for the contents of its own report.

3. Composition of the Task Forces

Each task force consists of a full-time Chairman and four or five part-time collaborators.

The Commission hopes that the opinion of graduate students will be consulted and that each task force will include at least one student.

The Commission suggests that it would be desirable that each task force include one member from the Faculty of Science.

4. Critical Path

Task forces must submit their reports to the Commission by January 30, 1975.

In order to follow the work of the task forces and to allow an exchange

of views, the Commission will convene the Chairmen of the task forces during the second fortnight of November 1974.

The Executive Director of the Commission will maintain contact with the Chairman of each task force.

5. Terms of Reference of the Task Forces:

The Commission on Graduate Studies in the Humanities and Social Sciences invites its task forces to make an inventory and an analysis of the policies, patterns of organization and regulations governing university education and research at the master's and doctoral levels, as well as at the postdoctoral level in Canadian universities, with particular reference to their own university and to make recommendations.

The Commission will itself deal with the entire range of questions raised by the terms of reference.

The task forces are invited to take a position on all questions that they consider important.

Without limiting the scope of the task forces, the Commission invites them to study four groups of questions that the Commission considers important.

For each of these questions, the Commission wishes to obtain not only a complete inventory of the available facts but also comments and recommendations describing ways of improving the present condition.

Owing to the limited time available and to budgetary restrictions, the task forces should confine themselves, in the main, to the use of data that are now available.

a. Research

- Taking into account the need for material support, the exigencies and constraints of university education, how should research in the humanities and social sciences now be defined?
- What factors make fundamental research and practical research different in the humanities and social sciences?
- Is there a difference between quantitative research and qualitative research and, if there is, what are the consequences in respect of the humanities and social sciences?
- What criteria are used in your university to assess the importance and quality of research?

- What are the human and social problems that require attention, and is an effort being made to promote study of them?
- How extensive is nonsubsidized research in your university? How significant is it in the humanities and social sciences?
- In your university, what are peak sectors and sectors of excellence in the humanities and social sciences?

b. Relationship of Teaching and Research

- In what ways do teaching and research complement each other?
- What differences are there in the ways that research complements teaching in the humanities on the one hand and in the social sciences on the other?
- What more can be done to make teaching and research complementary activities?
- Every university that has important programs of research assigns rare and valuable resources to those programs: how does that affect its teaching role? Should teaching be the main role of the contemporary university?
- What kinds of practical research (mission-oriented) are inconsistent with the teaching role of the university?
- How could the content of programs and techniques of teaching be designed to produce more research scholars and more significant research?
- What conditions would enable the professor to perform effectively his dual role as teacher and research scholar?

c. Organization of the Research

- Do the present methods of financing research facilitate or hinder multidisciplinary research?
- What policies and regulations of organizations like the Canada Council and the Institute for Policy Research would ensure adequate support of research projects in the humanities and social sciences?
- It would appear that the organization of research in the physical sciences is generally good: salary budgeted for assistants, summer programs, possibility of obtaining space and equipment. Why do the humanities and social sciences not enjoy the same conditions of work? How can present practice be improved?
- Are there research seminars in your university? What is your opinion of that formula?
- How well do the present methods of financing research work to the advantage

of the university, the members of faculty so engaged and the graduate students?

d. Broad Orientations

- What kinds of students are attracted by the humanities and the social sciences? How competent are they in the opinion of their instructors?
- What is now known about the ambitions and aspirations of your graduate students?
- If universities are to remain centres of research, how should it be organized and administered: by departments, centres or institutes, or some other way?
- To what extent should research done in Canadian universities deal with Canadian problems?
- Can centres of excellence in teaching and research be created by pooling the resources of all the universities in a region?
- What is likely to be the effect of new programs of continuing education on the traditional patterns of higher education and on research?

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supérieures dans les sciences humaines the humanities and the social sciences

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[6.] PROPOSED GUIDELINES FOR DISCIPLINE STUDIES

Our Commission has been asked to examine the trends and patterns of graduate studies in recent years, and to assess future needs and prospects. We are commissioning studies of certain disciplines as part of our enquiry into graduate studies in the humanities and social sciences.

I- Each discipline study should examine the evolution of graduate studies in the discipline in Canada in recent years.

- a) The period covered by the study will be determined by the pattern of graduate studies in the field and by the accessibility of information. It is expected that each study will deal with at least the last decade of development, but it may cover two decades or more, if this seems feasible or desirable.
- b) One aspect which should receive special attention is the evolution of graduate programs for the discipline. Have programs been modified to include new areas to reflect changing concepts or emphases within the discipline? Have such new areas replaced other areas, increased the options or have they expanded the prerequisites in the program?

From this evolution, it should be possible to assess the implicit objectives of the course work in the graduate programs. For the PhD programs, is there a changing balance, for example, between a comprehensive knowledge of the discipline and specialized training in some aspect of the discipline? What impact has this had on the content and the approach in graduate seminars? Is a distinction emerging between seminars which survey a body of knowledge and other seminars which stress methodology? What is the relationship between the research interests of the faculty and teaching at the graduate level? Is the course work an expanding or diminishing proportion of PhD programs?

... 2

To sum it up: What are the objectives of the course work in the graduate program?

- c) There is also the question of the MA programs. Is there a trend toward the MA becoming a terminal degree with distinct objectives? Or is the MA program seen as the first stage of a PhD program? And has there been a change in the emphasis on the thesis in MA programs?
- d) Another aspect of graduate programs which may be revealing is the possible changes in the nature and scope of the thesis. Have thesis topics become narrower and more specialized? Has there been an increasing emphasis on methodology? Do thesis topics reflect shifting interests within the discipline?

To sum it up: What are the objectives of the thesis in the graduate program?

- e) Have changing employment opportunities had any apparent influence on graduate programs?

II- Each discipline study should then assess future needs and prospects in the light of this evolution.

- a) Is it possible to deduce the objectives of graduate training in the discipline from the existing programs? Are these programs effectively designed to achieve these objectives or are there inconsistencies or contradictions which could be eliminated?
 - b) Does the evolution of graduate studies in this discipline suggest special problems of funding which granting agencies should take into consideration?
-

7. ACKNOWLEDGEMENTS

A. A number of special investigations and studies were made by scholars on task forces at representative universities and in discipline associations to assist the commissioners with their inquiry:

1) The University of Alberta Task Force Report:

E.J.H. Greene, Chairman
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2) The University of British Columbia Task Force Report:

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3) "The Role of the Humanities and Social Sciences in the Graduate Program," the Dalhousie University Task Force Report:

R.L. Comeau, Chairman
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Doris Dyke
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4) The Laval University Task Force Report:

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5) "Les études supérieures en sciences humaines" (Graduate Studies in the Humanities and Social Sciences), the University of Montreal Task Force Report:

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Bruno Cardu
Camille Limoges
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Jean-Pierre Wallot
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- 6) "A Commitment to Excellence," the Queen's University Task Force Report:
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Frank Flatters
Peter Goheen
George Rawlyk
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- 7) The University of Toronto Task Force Report:
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Calvin Normore
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A.E. Safarian
R.A. Spencer
Catherine Aird
- 8) "Graduate Studies and Research at York University in the Humanities and Social Sciences, Past, Present and Future," the York University Task Force Report:
- David V.J. Bell, Chairman
Barry Argyle
Kimmo Innanen
Réjean Landry
John O'Neill
Graham F. Reed
Deborah H. Samuel
- 9) "Graduate Studies in English in Canada," the Association of Canadian University Teachers of English Disciplinary Study:
- Sidney Warhaft, University of Manitoba
- 10) The Association of Canadian University Teachers of French Disciplinary Study:
- Jack Warwick, York University
- 11) "Geography: Trends and Patterns of Graduate Studies in Recent Years and Future Prospects," the Canadian Association of Geographers Disciplinary Study:
- Trevor Lloyd, McGill University
- 12) "Recent Tendencies in Graduate Research in History," the Canadian Historical Association Disciplinary Study:
- Carl Berger, University of Toronto

- 13) "Political Science in Canada: Graduate Studies and Research," the Canadian Political Science Association Disciplinary Study:
Hugh G. Thorburn, Queen's University
- 14) "Les études avancées de science politique dans les départements francophones" (Political Science: Graduate Studies in Francophone Departments), the Société canadienne de science politique (Canadian Political Science Society) Disciplinary Study:
Vincent Lemieux, Laval University

A number of other reports or studies were made specifically for and within the Commission:

- 15) "Canadian University Libraries and Research in the Humanities and Social Sciences." William Watson and Basil Stuart-Stubbs.
- 16) Meetings with University of Montreal and Laval University Graduates. Françoise Labarre.
- 17) "Aspirations et besoins des étudiants, chercheurs en formation" (Students as Scholars in Training: Needs and Aspirations). Blaise Lefebvre.
- 18) Student Opinion Survey. Ellen Windheim.
- 19) Outline of scenario/data base for survey of graduate students. T.F. Carney, University of Manitoba.
- 20) Survey of Research Funding. M. Miner, D. Caskie, G. Larocque.
- 21) Cohort Analysis. M. Miner.
- 22) A Study of the Canada Council. M. Miner.
- 23) Statistical analyses. D. Caskie.

B. Briefs and mémoires sent to the Commission on Graduate Studies in the Humanities and Social Sciences

I. From Universities and Individuals within Universities

- 1) Acadia University: J.M.R. Beveridge.
- 2) Bishop's University: Professors P.A. Baskerville, G. Retzleff, F. Siddiqui, R.W.E. Forrest, R.E. Reeve; submitted by R.E. Reeve.
- 3) Brock University: Alan Earp.
- 4) University of Calgary: The Faculty of Graduate Studies; submitted by W.A. Cochrane.
- 5) Concordia University: Michael Sheldon.
- 6) University of Guelph: H.S. Armstrong.
- 7) University of King's College, Halifax: J. Graham Morgan.

- 8) Lakehead University: Andrew D. Booth.
- 9) Laval University: Larkin Kerwin.
- 10) Laurentian University: Edgar Wright.
- 11) University of Lethbridge: The Dean's Council.
- 12) McGill University: a composite brief submitted by W.F. Hitschfeld.
 - a) A Committee of the Faculty:
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 Hoffmann (History)
 Trentman (Philosophy)
 Green (Economics)
 Trigger (Anthropology)
 Hills (Geography)
 Galavaris (Art History)
 Whitmore (Management)
 Robinson (Sociology).
 - b) The Department of Classics.
 - c) The Faculty of Music: Paul Pedersen.
 - d) The Department of Art History: George Galavaris.
 - e) The Institute of Islamic Studies: Charles Adams.
 - f) The Department of Russian and Slavic Studies: John Greer Nicholson.
 - g) Education.
 - h) "Draft Proposal for PhD in Educational Psychology": George L. Geis, Bruce M. Shore, Centre for Learning and Development.
 - i) The Department of Hispanic Languages and Literature: S. Lipp.
 - j) The Department of Anthropology:
 1. "The Funding of Anthropological Research": Dan R. Aronson.
 2. "Le rôle des études graduées sur la qualité d'un département" (Influence of Graduate Studies on the Quality of Departments): Jérôme Rousseau.
 3. "L'anthropologie et les objectifs nationaux canadiens" (Anthropology and National Objectives in Canada): Bernard Arcand.
 4. "The Role of Research Abroad in Anthropology": Philip Carl Salzman.
 - k) Report of a Graduate Anthropology Student: Jane Bestor.
- 13) McMaster University: Leslie J. King.
- 14) University of Manitoba, Faculty of Law: C.H.C. Edwards and Keith Turner.
- 15) Memorial University: a composite brief
 - a) "Public Policy, Graduate Training and the Humanities": The Humanities Committee. C.R. Robinson, Chairman, D. Alexander, F.L. Jackson and G.M. Story.
 - b) Summary of Responses of the Humanities Departments at the Memorial University of Newfoundland to the Questionnaire Prepared by the Canada Council Commission on Graduate Studies for the Use of Canadian Learned Societies.
 - c) "Graduate Studies and Research in the Social Sciences": The Social Science Departments. Hugh Whalen, Chairman, F. Johnstone, Noel Roy, Robert Paine and Maurice Scarlett.

- 16) "Les défis d'une petite université francophone isolée dans les provinces de l'Atlantique" (Challenges Facing a Small Francophone University Located in the Atlantic Provinces), University of Moncton: Greg Allain, Léandre Desjardins, René Lecomte, Jules Léger, Clément Morin, Serge Morin, Eugène Richard and Michel Saint-Louis.
- 17) University of Moncton, Research Council: B.J. Newbold.
- 18) Mount Allison University: William Christian.
- 19) Mount Saint Vincent University.
- 20) University of New Brunswick: W.C. Desmond Pacey, Gilbert D. Allardyce, Lauriat Lane, Peter M. McGahan and John Reid.
- 21) University of Ottawa, Faculty of Social Sciences.
- 22) University of Ottawa, School of Graduate Studies: Committee of the School of Graduate Studies.
- 23) University of Prince Edward Island: Kenneth L. Ozmon.
- 24) University of Quebec: Research Vice-Chairmanship.
- 25) University of Quebec at Trois-Rivières: Dean of Graduate Studies and Research.
- 26) University of Regina: a composite brief by A.B. VanCleave, H. Jack and C.K. Knapper; submitted by A.B. VanCleave. Additional contributions by: J.A. Boan, Economics; E.H. Dale, Geography; S. Harland, Librarian; C.B. Koester, History; M. Lundlie, French; John C. Nugent, Visual Arts; R.K. Pope, Anthropology; J.K. Roberts, Political Science; Eric Salmon, Drama; and W.D. Stewart, Canadian Plains Research Centre.
- 27) Saint Francis Xavier University: "Address to Workshop on Social Science Research Needs of Smaller Canadian Universities" by John T. Sears, with material by F. Harrison, Ken den Heyer, W. Jackson, R. MacLean, J.B. Stewart and D. Wood.
- 28) Saint-Paul University.
- 29) University of Saskatchewan: David Smith.
- 30) Simon Fraser University: John Wheatley.
- 31) Trent University.
- 32) University of Victoria: Christine Mather, Chairman, and the sub-committee of the Graduate Faculty Executive, G.V. Downes, L. Laudadio, M. Micklewright, with contributions by Alan Gowans, R.R. Jeffels and David L. Jeffrey.
- 33) University of Waterloo: M. Vogel-Sprott, G. Hibbard, E. Holmes and G. Ostrander.
- 34) University of Western Ontario: H.W. Baldwin, D.A. Chambers, J.G. Rowe and H.B. Stewart.
- 35) University of Windsor: C.P. Crowley.
- 36) University of Winnipeg: The Senate Committee on Graduate Studies.

- 37) "York University Libraries". Thomas O'Connell.
- 38) "The Essential Role of Library Facilities in the Humanities and Social Sciences". Susan B. Merry, University of Toronto Library.
- 39) University of Regina Library: S. Harland.
- 40) Anthony Blackbourn, Department of Geography, University of Windsor.
- 41) "Studying and Living in Other Cultures". A.R. Kear, University of Manitoba.
- 42) T.M. Robinson, Trinity College.
- 43) Mary White, Trinity College.

II. From Academic Associations

- 1) Associação Canadiense de Hispanistas (Canadian Association of Hispanists): Kurt L. Levy.
- 2) Canadian Philosophical Association: J.A. Plamondon and M.J.A. Brook.
- 3) Canadian Association for Commonwealth Language and Literary Studies: R.T. Robertson.
- 4) Canadian Association of Slavists: Z. Folejewski.
- 5) Canadian Association of University Teachers of German: Hans Eichner, Kari Grimstad; and submitted by Robert H. Farquharson.
- 6) Canadian Council on Social Development: R. Baetz.
- 7) Canadian Council on Urban and Regional Research: Meyer Brownstone.
- 8) Canadian Psychological Association: Allan Paivio, Robert Gardner and Harry Hurwitz.
- 9) Canadian Society for Italian Studies: Antonio d'Andrea.
- 10) Canadian Society for the Study of Religion: a composite brief submitted by Cathleen M. Going.
 - a) Individual statements by
 Daniel Fraikin, Queen's University
 Cathleen M. Going, Thomas More Institute
 John Sandys-Wunsch, Memorial University
 C. Peter Slater, Carleton University
 - b) Department of Religious Studies, University of Ottawa:
 Georges Tissot.
 - c) Department of Religion, Concordia University: Charles Davis.
 - d) Department of Religious Studies, University of Quebec at
 Montreal: Roland Chagnon.
 - e) Department of Religion, McMaster University.
- 11) Classical Association of Canada: Leonard Woodbury.
- 12) Humanities Research Council: John Banks.

III. From Centres and Institutes

- 1) Canadian Plains Research Centre, University of Regina: W.D. Stewart.
- 2) Centre for Settlement Studies, University of Manitoba:
The Policy Committee, J.B. Nickels, J.A. Riffel.
- 3) C.R.A.D. (Centre de recherches en aménagement et développement)
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C.R.A.R. (Centre de recherches en aménagement régional)
(Regional Planning Research Centre, University of Sherbrooke:
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C.R.D.E. (Centre de recherches en développement économique)
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Pierre-Paul Proulx.
C.R.I.U. (Centre de recherches en innovations urbaines)
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C.R.U.U. (Centre de recherches urbaines et régionales)
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recherche scientifique (National Institute of Scientific Research):
Gérald Fortin.
- 4) Centre de recherches en psycho-mathématiques (Psycho-mathematics Research
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- 5) Centre de recherches en sociologie religieuse (Research Centre of Sociology
of Religion), Laval University: Raymond Lemieux, Paul Rémy and
Jean-Paul Rouleau.
- 6) Centre for French Area Studies, Queen's University: Pierre B. Gobin.
- 7) Centre for Learning and Development, McGill University: Bruce M. Shore
and George L. Geis.
- 8) Centre international de recherches sur le bilinguisme (International
Research Centre on Bilingualism), Laval University: Jean-Guy Savard.
- 9) Committee on Northern Studies, University of Manitoba: R.E. Longton and
W.W. Koolage.
- 10) Consultative Group on Survey Research: Raymond Breton, Toronto; Jacques
Brazeau, Montreal; Léon Dion, Laval; Harry Eastman, Toronto; David Elkins,
University of British Columbia; Maurice Pinard, McGill; Jenny Podoluk,
Statistics Canada; Fred Schindeler, Ministry of State for Urban Affairs;
and Mildred Schwartz, Illinois.
- 11) G.R.I.D.E.Q. (Groupe interdisciplinaire de recherche en développement
de l'est du Québec) (Interdisciplinary Research Group for the Development
of Eastern Quebec), University of Quebec at Rimouski: Fernand Harvey,
Coordinator, Yves Dion, Noël Bélanger, Yvon Bouchard, Pierre Bruneau,
Clermont Dugas, Pierre Fortin, Jacques Lemay, Guy Massicotte and
James D. Thwaite.

- 12) Institute of Applied Mathematics and Statistics, University of British Columbia: Frederic Y.M. Wan.
- 13) Institute for Behavioural Research, York University: H. Michael Stevenson.
- 14) Institute of Child Guidance and Development, University of Saskatchewan: John McLeod.
- 15) Institute of Comparative Law, McGill University: H.R. Hahlo.
- 16) Institute of Intergovernmental Relations, Queen's University: R.M. Burns.
- 17) Institute of Islamic Studies, McGill University: Charles Adams.
- 18) Institute for Northern Studies and the Arctic Research Training Centre, University of Saskatchewan: Robert M. Bone.
- 19) Institute of Pastoral Training, Halifax: R. Gordon Nodwell.
- 20) Institut supérieur des sciences humaines (Institute of Graduate Studies in the Humanities and Social Sciences), Laval University: Guy Godin.
- 21) Interuniversity Centre for European Studies, Montreal: Frederick Krantz.
- 22) Legal Research Institute, University of Manitoba: Paul Thomas.
- 23) Natural Resource Institute, University of Manitoba: G. Francis, E. Nickel and P. Nickel.
- 24) Shastri Indo-Canadian Institute.
- 25) Thomas More Institute of Canada for Research in Adult Liberal Studies: Emily Elizabeth Cran, Allen J. Hanley, Stanislaus Machnik, J. Martin O'Hara, Charlotte Tansey and R. Eric O'Connor, S.J., (Chairman).

We are grateful for the assistance of persons whose cooperation and initiative facilitated the transmission of briefs, research funding data or related information:

J.H. Archer, University of Regina
 Jean-Paul Baillargeon, Quebec Ministry of Education
 H.W. Baldwin, University of Western Ontario
 John Banks, Humanities Research Council
 Louis Berlinguet, University of Quebec
 J.M.R. Beveridge, Acadia University
 Gilles Boulet, University of Quebec at Trois-Rivières
 Maurice Brossard, University of Quebec at Montreal
 Iain Bruce, Memorial University
 Joanne Harris Burgess, Association for Canadian and Quebec Literatures
 M. Denis Carrier, University of Ottawa
 T.C. Clark, Office of Research Administration, University of Toronto
 F.A. Demarco, University of Windsor
 Robert Després, University of Quebec
 L.H. Durling, Maritime Provinces Higher Education Commission
 John Evans, University of Toronto
 W.D. Farr, York University
 Goldwin S. French, Victoria University

Louis Gendreau, Conseil des universités (Council of Universities), Quebec
 B.J. Gick, Research Grants Officer, McGill University
 T. Barr Greenfield, Canadian Society for the Study of Higher Education
 J.E. Hogarth, Director, Canadian Research Administrators
 B.G. Hogg, University of Winnipeg
 Owen G. Holmes, University of Lethbridge
 H.M.B. Hurwitz, University of Guelph
 Wayne Ingalls, Mount Saint Vincent University
 Jean-Marie Joly, University of Ottawa
 J.M. Kelly, St. Michael's College, Toronto
 F.J. Kidd, Ministry of Colleges and Universities, Toronto
 Lesle J. King, McMaster University
 Robert J. Lachapelle, Office of the Secretary of State
 Jean-Marc Lalancette, University of Sherbrooke
 Anne Lancashire, School of Graduate Studies, Toronto
 H. Ian Macdonald, York University
 A.H. MacLean, Acadia University
 J.B. MacMartin, University Grants Commission, Winnipeg
 B.C. Matthews, University of Waterloo
 Jean-Louis Meunier, Office of Grants and Scholarships, National
 Research Council
 Arthur Motyer, Mount Allison University
 B.N. Moyls, University of British Columbia
 A. Naaman, University of Sherbrooke
 T.E.W. Nind, Trent University
 M.L. Philippe Normand, Saint-Paul University
 M.V. Ouellet, University of Quebec
 Jean-Guy Pacquet, Laval University
 Gilles Paquet, Carleton University
 Allan Paivio, Canadian Psychological Association
 Jacques R. Parent, University of Quebec at Trois-Rivières
 F.F. Park, Office of Grants and Scholarships, National Research Council
 M. Maurice Richer, Council of Ministers of Education
 R.H. Roy, Faculty of Graduate Studies, University of Victoria
 M. Schweiger, University of Moncton
 Michael Sheldon, Concordia University
 David E. Smith, University of Saskatchewan
 H.B. Stewart
 Paul Thomas, Legal Research Institute, University of Manitoba
 I. Valen, Department of Education, Victoria
 Gilles Valence, University of Sherbrooke
 J. Vasseur, University of Montreal
 R.L. Watts, Queen's University
 D.C. Williams, University of Western Ontario

For furnishing us with university statistics we thank

Dean F.A. Aldrich, Memorial University
 Dr. L.P. Chiasson, St. Francis Xavier University
 Dean M.R. Foran, Nova Scotia Technical College
 Mlle Jeannita Gaudet, Records Officer, University of Moncton
 Dr. Hugh Gillis, St. Mary's University
 Dean J.B. Hyne, University of Calgary

Dean S.A. Jennings, University of Victoria
 Dean R.J. Kavanaugh, University of New Brunswick
 M. Normand Lachapelle, University of Sherbrooke
 Dean K.T. Leffek, Dalhousie University
 Dean K.T. McCallum, University of Saskatchewan
 Dean J.R. McGregor, University of Alberta
 Dean I. McTaggart-Cowan, University of British Columbia
 M. Schweiger, University of Moncton
 Dean S. Standil, University of Manitoba
 Dean A.B. VanCleave, University of Regina
 Dean J. Wheatley, Simon Fraser University

We wish to acknowledge with appreciation the letters received from
 graduate students and graduate student association, notably the following:

Barbara Bernhart
 John E. Barrett
 K. Jean Cottam
 Felix Cherniavsky
 M.H. Lewis
 Carol Wootton
 K.G. Runge, Society of Graduate Students of the University of
 Western Ontario

Janet Moodie, Canadian Union of Graduate Students

The Graduate Student Associations of the University of Toronto,
 University of Alberta and Dalhousie University

We thank the many librarians who contributed documentation:

Donald Baird, Simon Fraser University
 Jacqui Bench, Carleton University
 E.J. Belton, Lakehead University
 Jean Boone, University of New Brunswick
 Rev. Charles Brewer, St. Francis Xavier University
 Angela Carter, University of Western Ontario
 Simonne Clermont, University of Moncton
 W.R.M. Converse, University of Calgary
 Ruth Craig, University of Calgary
 Dorothy Davidson, McMaster University
 D.W. Halliwell, University of Victoria
 James Hogan, Brock University
 Margaret MacKenzie, University of Moncton
 Eleanor E. Magee, Mount Allison University
 Rev. Arthur Millward, St. John's College
 Hans Møller, University of Ottawa
 Andrzej H. Mojewski, Laurentian University
 Elizabeth Sylvester, McGill University

We acknowledge with appreciation help given to us, in some cases by consultation and in others through documentation or letters of advice and encouragement, by or through the auspices of the following:

A.E. Barker, University of Western Ontario
 David Breneman, National Board on Graduate Education, Washington
 T.F. Carney, University of Manitoba
 A.W.R. Carrothers
 Rodney A. Clifton, University of Toronto
 Raymond Dufresne, Education Counsellor
 George E. Flower, O.I.S.E.
 E.B. Harvey, O.I.S.E.
 René Hurtubise, Conférence des recteurs et des principaux des universités du Québec (Conference of Rectors and Principals of Quebec Universities)
 Maurice Lamontagne
 John A. Lee, Department of Sociology, Scarborough College
 Anne McKinnon, Association of Atlantic Universities, Halifax
 Gilles Nadeau, Centre for Learning and Development, McGill University
 J.A. Philip
 Gilles Picard, Direction de la coordination de la politique scientifique (Science Policy Coordination Directorate), Quebec
 Yakov Rabkin, Institut d'histoire et de socio-politique des sciences (Institute on the History and Socio-politics of Science), University of Montreal
 K.B. Sayeed, Queen's University
 Brigitte Schroeder-Gudehus, University of Montreal
 Bernard Sheehan, University of Calgary
 E.F. Sheffield, O.I.S.E.
 T.H.B. Symons, Trent University

We are most appreciative of the collaboration of Statistics Canada and of the personnel of that organization, including Yvon Ferland, Yves Fortin, Max von Zur-Muehlen (now of the Office of the Secretary of State), M. Wisenthal and D. Zussman.

We are grateful to the A.U.C.C. for the use of documents and books from their library, with the assistance of Huguette Brunet, Gail Kun, Marino Kristjanson, Lucien F. Michaud and Hazel Roberts and for the encouragement of their administration.

We thank especially the Canada Council for its support and, for their help and advice, the following: the late Alan Armstrong, Audrey Forster, André Fortier, Claude Gauthier, Norman Lamont and Guy Rocher.

We are deeply grateful to Mr. Frank Milligan of the Canada Council whom we thank for support and help which took many forms and for the prompt, courteous attention that he always gave to our requests and to any question that we raised with him.

Finally, the commissioners acknowledge with gratitude the contribution of M. Jacques Flamand who undertook the exacting task of supervising the translation of the report and preparing the final text for publication in both French and English. The commissioners thank the Canada Council for the services of M. Jacques Flamand and him, as editor, for work far beyond the call of duty.

APPENDIX II

The Faculty -- Statistics

Tables II, 1-16

TABLE 11, 1
NUMBER OF FULL-TIME UNIVERSITY TEACHERS, BY FIELD, CANADA 1960-61 - 1974-75, SELECTED YEARS

YEAR	HUMAN SCIENCES			FINE ARTS	NATURAL SCIENCES					OTHER	TOTAL
	HUMANITIES	SOCIAL SCIENCES	SUB-TOTAL		AGRICULTURE & BIOLOGICAL SCIENCES	ENGINEERING & APPLIED SCIENCES	HEALTH SCIENCES	MATHEMATICS & PHYSICAL SCIENCES	SUB-TOTAL		
1960-61	1,172	1,335	2,514	101	734	776	517	1,133	3,160	169	5,944
1965-66	2,772	3,001	5,773	266	1,195	1,142	902	2,076	5,315	308	11,662
1967-68	3,821	4,530	8,351	463	1,503	1,538	1,527	2,663	7,231	333	16,378
1968-69	4,294	5,273	9,567	534	1,708	1,707	1,795	2,945	8,155	409	18,665
1969-70	4,960	6,304	11,264	703	2,005	2,034	2,002	3,320	9,361	412	21,740
1970-71	5,319	7,264	12,583	862	1,652	2,021	2,982	3,459	10,114	719	24,275
1971-72	5,778	8,571	14,349	909	1,812	2,049	3,411	3,891	11,163	504	26,925
1972-73	5,799	8,940	14,739	993	1,968	2,100	3,492	3,960	11,520	531	27,783
1973-74	5,766	9,318	15,084	1,035	2,097	2,160	3,786	4,005	12,048	252	28,419
1974-75	5,640	9,942	15,582	1,128	2,224	2,262	4,009	4,068	12,563	773	30,046

SOURCE: Statistics Canada, unpublished data.
Excludes some senior administrators in earlier years.

TABLE II, 2

FULL-TIME UNIVERSITY TEACHERS, BY FIELD, CANADA
1960-61 to 1973-74, SELECTED YEARS
GROWTH INDEXES (1960-61=100)

YEAR	HUMAN SCIENCES			FINE ARTS	NATURAL SCIENCES				OTHER	TOTAL
	HUMANITIES	SOCIAL SCIENCES	SUB-TOTAL		AGRICULTURE & BIOLOGICAL SCIENCES	ENGINEERING & APPLIED SCIENCES	HEALTH SCIENCES	MATHEMATICS & PHYSICAL SCIENCES		
1960-61	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1965-66	235.1	224.8	229.6	263.4	162.8	147.2	174.5	183.2	182.2	196.2
1967-68	324.1	339.3	332.2	458.4	204.8	198.2	295.4	235.0	197.0	275.5
1968-69	364.2	395.0	380.5	528.7	232.7	220.0	347.2	259.9	242.0	314.0
1969-70	420.7	472.2	448.1	696.0	273.2	262.1	387.2	293.0	243.8	365.7
1970-71	451.1	544.1	500.5	853.5	225.1	260.4	576.8	305.3	425.4	408.4
1971-72	490.1	642.0	570.8	900.0	246.9	264.0	659.8	343.4	298.2	453.0
1972-73	491.9	669.7	586.3	983.2	268.1	270.6	675.4	349.5	314.2	467.4
1973-74	489.1	698.0	600.0	1024.8	285.7	278.4	732.3	353.5	149.1	475.1
1974-75	478.4	744.7	619.8	1116.8	303.0	291.5	775.4	359.0	457.4	505.5

SOURCE: Statistics Canada, unpublished data.

TABLE II, 3
ANNUAL PERCENTAGE COMPOSITION OF UNIVERSITY TEACHERS
IN CANADA, BY FIELD, 1960-61 TO 1974-75, SELECTED YEARS

YEAR	HUMAN SCIENCES			FINE ARTS	NATURAL SCIENCES				SUB-TOTAL	OTHER	TOTAL
	HUMANITIES	SOCIAL SCIENCES	SUB-TOTAL		AGRICULTURE & BIOLOGICAL SCIENCES	ENGINEERING & APPLIED SCIENCES	HEALTH SCIENCES	MATHEMATICS & PHYSICAL SCIENCES			
1960-61	19.8	22.5	42.3	1.7	12.3	13.1	8.7	19.1	53.2	2.8	100.0
1965-66	23.8	25.7	49.5	2.3	10.2	9.7	7.7	17.8	45.6	2.6	100.0
1967-68	23.3	27.7	51.0	2.8	9.2	9.4	9.3	16.3	44.2	2.0	100.0
1968-69	23.0	28.3	51.3	2.9	9.2	9.2	9.6	15.8	43.7	2.2	100.0
1969-70	22.8	29.0	51.8	3.3	9.2	9.4	9.2	15.3	43.1	1.9	100.0
1970-71	21.9	29.9	51.8	3.6	6.8	8.3	12.3	14.2	41.7	3.0	100.0
1971-72	21.5	31.8	53.3	3.4	6.7	7.6	12.7	14.5	41.5	1.9	100.0
1972-73	20.9	32.2	53.1	3.6	7.1	7.6	12.6	14.3	41.5	1.9	100.0
1973-74	20.3	32.8	53.1	3.6	7.4	7.6	13.3	14.1	42.4	0.9	100.0
1974-75	18.8	33.1	51.9	3.8	7.4	7.5	13.3	13.5	41.8	2.6	100.0

SOURCE: Statistics Canada, unpublished data.

FIELD	CANADA			
	1971-72	1972-73	1973-74	1974-75
Humanities	5778	5799	5766	5640
Social sciences	8571	8940	9318	9942
Sub-total: human sciences	14349	14739	15084	15582
Fine arts	909	993	1035	1128
Agric. & biological sciences	1812	1968	2097	2224
Engineering	2049	2100	2160	2262
Health professions	3411	3492	3786	4009
Math. & physical sciences	3891	3960	4005	4068
Sub-total: natural sciences	11163	11520	12048	12563
Other	504	531	252	775
TOTAL	26925	27783	28419	30046

FIELD	ATLANTIC REGION			
	1971-72	1972-73	1973-74	1974-75
Humanities	738	768	753	744
Social sciences	882	981	1086	1115
Sub-total: human sciences	1620	1749	1839	1857
Fine arts	108	111	120	120
Agric. & biological sciences	165	168	183	201
Engineering	207	213	219	222
Health professions	285	324	342	378
Math. & physical sciences	468	504	510	525
Sub-total: natural sciences	1125	1209	1254	1326
Other	21	27	18	45
TOTAL	2874	3096	3231	3348

FIELD	QUEBEC			
	1971-72	1972-73	1973-74	1974-75
Humanities	1026	996	990	957
Social sciences	1884	1893	2046	2259
Sub-total: human sciences	2910	2889	3036	3216
Fine arts	189	210	216	225
Agric. & biological sciences	357	450	537	583
Engineering	510	561	597	594
Health	891	831	900	1021
Math. & physical sciences	924	891	915	913
Sub-total: natural sciences	2682	2733	2949	3116
Other	96	219	42	11
TOTAL	5877	6051	6243	6568

FIELD	ONTARIO			
	1971-72	1972-73	1973-74	1974-75
Humanities	2607	2661	2640	2634
Social sciences	3252	3501	3588	3972
Sub-total: human sciences	5859	6162	6228	6606
Fine arts	279	330	363	414
Agric. & biological sciences	639	663	669	732
Engineering	834	834	822	951
Health professions	1293	1380	1443	1515
Math. & physical sciences	1425	1479	1494	1575
Sub-total: natural sciences	4191	4356	4428	4775
Other	219	183	132	279
TOTAL	10548	11037	11151	12072

FIELD	WESTERN REGION			
	1971-72	1972-73	1973-74	1974-75
Humanities	1407	1374	1383	1305
Social sciences	2553	2565	2598	2593
Sub-total: human sciences	3960	3939	3981	3903
Fine arts	333	342	356	369
Agric. & biological sciences	651	687	708	708
Engineering	498	492	522	495
Health professions	942	957	1101	1095
Math. & physical sciences	1074	1086	1086	1050
Sub-total: natural sciences	3165	3222	3417	3348
Other	168	96	60	438
TOTAL	7626	7599	9794	8058

SOURCE: Statistics Canada (in co-operation with the Association of Universities and Colleges of Canada), Women in Canadian Universities: A Statistical Compendium, Ottawa, 1975, and Statistics Canada, unpublished data.

TABLE XI-5

FULL-TIME UNIVERSITY TEACHERS, BY FIELD, BY REGION, CANADA, 1972-73 to 1974-75
GROWTH INDEXES (1971-72=100)

FIELD	CANADA			ATLANTIC REGION			QUEBEC			ONTARIO			WESTERN REGION		
	1972-73	1973-74	1974-75	1972-73	1973-74	1974-75	1972-73	1973-74	1974-75	1972-73	1973-74	1974-75	1972-73	1973-74	1974-75
Humanities	100	100	98	104	102	101	97	96	93	102	101	101	98	98	93
Social sciences	104	109	116	111	123	126	100	109	119	108	110	122	100	102	102
Sub-total: human sciences	103	105	109	108	114	115	99	104	111	105	106	113	99	101	99
Fine arts	100	114	124	103	111	111	111	114	119	118	130	148	103	101	111
Agric. & biol. sciences	100	116	123	102	111	122	126	150	163	104	105	115	106	109	109
Engineering	102	105	110	103	106	107	110	117	116	100	99	114	99	105	99
Health professions	100	111	118	114	120	133	93	103	115	107	112	117	102	117	116
Math. physical sciences	100	103	105	108	109	112	96	99	99	104	105	111	101	101	98
Sub-total: natural sciences	103	108	113	107	111	118	102	110	116	104	106	114	102	108	106
Other	100	50	153	129	86	214	228	44	11	86	60	127	57	36	261
TOTAL	100	106	112	108	112	116	103	106	112	105	106	114	100	102	106

SOURCE: Statistics Canada (in co-operation with the Association of Universities and Colleges of Canada), Women in Canadian Universities; A Statistical Compendium, Ottawa, 1975, and Statistics Canada, unpublished data.

TABLE
II-6ANNUAL FIELD DISTRIBUTION OF FULL-TIME UNIVERSITY TEACHERS,
BY REGION, CANADA, 1971-72 to 1974-75 (PERCENTAGES)

559

FIELD	CANADA			
	1971-72	1972-73	1973-74	1974-75
Humanities	21.5	20.9	20.3	18.8
Social sciences	31.8	32.2	32.8	33.1
Sub-total: human sciences	53.3	53.1	53.1	51.9
Fine arts	3.4	3.6	3.6	3.8
Agric. & biological sciences	6.7	7.1	7.4	7.4
Engineering	7.6	7.6	7.6	7.5
Health professions	12.7	12.6	13.3	13.3
Math. & physical sciences	14.5	14.3	14.1	13.5
Sub-total: natural sciences	41.5	41.5	42.4	41.8
Other	1.9	1.9	0.9	2.6
TOTAL	100.0	100.0	100.0	100.0

FIELD	ATLANTIC REGION			
	1971-72	1972-73	1973-74	1974-75
Humanities	25.7	24.8	23.3	22.2
Social sciences	30.7	31.7	33.6	33.2
Sub-total: human sciences	56.4	56.5	56.9	55.5
Fine arts	3.8	3.6	3.7	3.6
Agric. & biological sciences	5.7	5.4	5.7	6.0
Engineering	7.2	6.9	6.8	6.6
Health professions	9.9	10.5	10.6	11.3
Math. & physical sciences	16.3	16.3	15.8	15.7
Sub-total: natural sciences	39.1	39.1	38.8	39.6
Other	0.7	0.9	0.6	1.9
TOTAL	100.0	100.0	100.0	100.0

FIELD	QUEBEC			
	1971-72	1972-73	1973-74	1974-75
Humanities	17.5	16.5	15.9	14.6
Social sciences	32.1	31.3	32.8	34.4
Sub-total: human sciences	49.5	47.7	48.6	49.0
Fine arts	3.2	3.5	3.5	3.4
Agric. & biological sciences	6.1	7.4	8.6	8.9
Engineering	8.7	9.3	9.6	9.0
Health professions	15.2	13.7	14.4	15.5
Math. & physical sciences	15.7	14.7	14.7	14.0
Sub-total: natural sciences	45.6	45.2	47.2	47.4
Other	1.6	3.6	0.7	0.2
TOTAL	100.0	100.0	100.0	100.0

FIELD	ONTARIO			
	1971-72	1972-73	1973-74	1974-75
Humanities	24.7	24.1	23.7	21.8
Social sciences	30.8	31.7	32.2	32.9
Sub-total: human sciences	55.5	55.8	55.9	54.7
Fine arts	2.6	3.0	3.3	3.4
Agric. & biological sciences	6.1	6.0	6.0	6.1
Engineering	7.9	7.6	7.4	7.9
Health professions	12.3	12.5	12.9	12.5
Math. & physical sciences	13.5	13.4	13.4	12.9
Sub-total: natural sciences	39.7	39.5	39.7	39.5
Other	2.1	1.7	1.2	2.3
TOTAL	100.0	100.0	100.0	100.0

FIELD	WESTERN REGION			
	1971-72	1972-73	1973-74	1974-75
Humanities	18.5	18.1	17.7	16.2
Social sciences	33.5	33.8	33.3	32.2
Sub-total: human sciences	51.9	51.8	51.1	48.4
Fine arts	4.4	4.5	4.3	4.6
Agric. & biological sciences	8.5	9.0	9.1	8.8
Engineering	6.5	6.5	6.7	6.1
Health professions	12.4	12.6	14.1	13.5
Math. & physical sciences	14.1	14.3	13.9	13.0
Sub-total: natural sciences	41.5	42.4	43.8	41.5
Other	2.2	1.3	0.8	5.4
TOTAL	100.0	100.0	100.0	100.0

SOURCE: Statistics Canada (in co-operation with the Association of Universities and Colleges of Canada), Women in Canadian Universities: A Statistical Compendium, Ottawa, 1975, and Statistics Canada, unpublished data.

TABLE II.7
FULL-TIME UNIVERSITY TEACHERS,
BY FIELD AND DISCIPLINE OF TEACHING, CANADA
1971-72, 1972-73, 1973-74

FIELD & DISCIPLINE*	1971-72	1972-73	1973-74	INDEXES 1971-72-100.0		COLUMN %	
				1972-73	1973-74	1971-72	1973-74
H 1							
2							
3	969	1017	1005	105.0	103.7	3.6	3.5
4	1461	1407	1419	96.3	97.1	5.4	5.0
5	855	816	765	95.4	89.5	3.2	2.7
6							
7							
8	675	669	669	99.1	99.1	2.5	2.4
9							
10							
ST H	5685	5708	5676	100.4	99.8	21.1	20.0
S 1	870	936	1002	107.6	115.2	3.2	3.5
2							
3	93	90	93	96.8	100.0	0.3	0.3
4	822	840	885	102.2	107.7	3.1	3.1
5	2421	2568	2664	106.1	110.0	9.0	9.4
6							
7							
8	417	480	492	115.1	118.0	1.5	1.7
9	648	681	636	105.1	98.1	2.4	2.2
10	1104	1134	1185	102.7	107.3	4.1	4.2
11	264	264	282	100.0	106.8	1.0	1.0
12	789	756	810	95.8	102.7	2.9	2.9
13							
ST SS	8667	9033	9411	104.2	108.6	32.2	33.1
ST HS	14352	14741	15087	102.7	105.1	53.3	53.1
FA	909	993	1032	109.2	113.5	3.4	3.6
A	1812	1971	2097	108.8	115.7	6.7	7.4
E	2052	2100	2157	102.3	105.1	7.6	7.6
H	3411	3492	3786	102.4	111.0	12.7	13.3
M	3894	3960	4005	101.7	102.9	14.5	14.1
ST NS	11169	11523	12045	103.2	107.8	41.5	42.4
T	26925	27783	28419	103.2	105.5	100.0	100.0

*See Code Sheet for interpretation of discipline and field codes and explanatory notes on the discipline composition.

SOURCE: Statistics Canada, in co-operation with the Association of Universities and Colleges, Women in Canadian Universities: A Statistical Compendium, Table 1, Ottawa, 1975.

TABLE II, 8
FULL-TIME UNIVERSITY TEACHERS, BY FIELD & DISCIPLINE
OF TEACHING, BY REGION, CANADA, 1971-72, 1972-73, 1973-74

FIELD & DISCIPLINE *	ATLANTIC REGION			QUEBEC			ONTARIO			WESTERN REGION		
	1971-72	1972-73	1973-74	1971-72	1972-73	1973-74	1971-72	1972-73	1973-74	1971-72	1972-73	1973-74
U 1												
2	132	141	141	168	192	183	417	429	417	252	255	264
3	213	219	216	171	141	141	606	603	594	471	444	468
4	132	129	129	216	177	156	363	372	348	141	141	132
5												
6												
7	75	84	81	123	108	120	312	324	318	162	150	150
8												
9												
10	732	762	747	1011	981	975	2553	2607	2589	1389	1356	1365
TH	117	132	144	234	270	294	261	276	291	255	255	276
S 1												
2	6	6	6	15	15	15	54	54	51	18	18	18
3	87	93	93	174	159	174	321	339	360	243	249	255
4	261	279	360	507	531	537	726	795	840	927	960	927
5												
6												
7												
8	36	42	45	123	153	153	165	192	198	93	93	99
9	69	81	81	81	81	87	369	378	345	129	138	123
10	141	159	162	210	216	225	468	510	522	285	249	276
11	30	27	27	66	60	69	90	93	102	78	81	87
12	93	102	102	171	129	168	342	354	363	183	171	177
13												
TSS	888	967	1092	1899	1908	2061	3306	3555	3639	2571	2583	2616
TUS	1620	1749	1839	2910	2889	3036	5859	6162	6228	3960	3939	3981
1A	108	111	120	189	210	216	279	330	363	333	342	336
A	165	168	183	357	450	537	639	663	669	651	687	708
E	207	213	219	510	561	597	834	834	822	498	492	522
H	285	324	342	891	831	900	1293	1380	1443	942	957	1101
M	468	504	510	924	891	915	1425	1479	1494	1074	1086	1086
ST	1125	1209	1254	2682	2733	2949	4191	4356	4428	3165	3222	3417
TOTAL	2874	3096	3231	5877	6051	6243	10548	11037	11151	7626	7599	7794

SOURCE: Statistics Canada, in co-operation with the Association of Universities and Colleges, Women in Canadian Universities: A Statistical Compendium, Table 1, Ottawa, 1975.

* See code sheet for interpretation of discipline and field codes and explanatory notes on the discipline composition.

TABLE II, 9
FULL-TIME UNIVERSITY TEACHERS BY FIELD & DISCIPLINE
OF TEACHING, BY REGION, CANADA 1973-74, INDEXES & PERCENTAGES

FIELD & DISCIPLINE*	INDEXES (1971-72=100.0)				PERCENTAGES			
	ATLANTIC	QUEBEC	ONTARIO	WESTERN	ATLANTIC	QUEBEC	ONTARIO	WESTERN
1	106.8	108.9	100.0	104.8	4.4	2.9	3.7	3.4
2	101.4	82.5	98.0	99.4	6.7	2.3	5.3	6.0
3	97.7	72.2	95.9	93.6	4.0	2.5	3.1	1.7
4								
5								
6								
7								
8	108.0	97.6	101.9	92.6	2.5	1.9	2.9	1.9
9								
10								
TU	102.0	96.4	101.4	98.3	23.1	15.6	23.2	17.5
1	123.1	125.6	111.5	108.2	4.5	.7	2.6	3.5
2								
3	100.0	100.0	94.4	100.0	0.2	0.2	0.5	0.2
4	106.9	100.0	112.1	104.9	2.9	2.8	3.2	3.3
5	137.9	105.9	115.7	100.0	11.1	8.6	7.5	11.9
6								
7								
8	125.0	124.4	120.0	106.5	1.4	2.5	1.8	1.3
9	117.4	107.4	93.5	95.3	2.5	1.4	3.1	1.6
10	114.9	107.1	111.5	96.8	5.0	3.6	4.7	3.5
11	90.0	104.5	113.3	111.5	0.8	1.1	0.9	1.1
12	109.7	98.2	106.1	96.7	3.2	2.7	3.3	2.3
13								
TSS	123.0	108.5	110.1	101.8	33.8	33.0	32.6	33.6
THS	113.5	104.3	106.3	100.5	56.9	48.6	55.9	51.1
TA	111.1	114.3	130.1	100.9	3.7	3.5	3.3	4.3
A	110.9	150.4	104.7	108.8	5.7	8.6	6.0	9.1
E	105.8	117.1	98.6	104.8	6.8	9.6	7.4	6.7
H	120.0	101.0	111.6	116.9	10.6	14.4	12.9	14.1
N	109.0	99.0	104.8	101.1	15.8	14.7	13.4	13.9
ST	111.5	110.0	105.7	108.0	38.8	47.2	39.7	43.8
TOTAL	112.4	106.2	105.7	102.2	100.0	100.0	100.0	100.0

SOURCE: Statistics Canada, in co-operation with the Association of Universities and Colleges,
Women in Canadian Universities: A Statistical Compendium, Table 1: Ottawa 1975.

* See Code Sheet for interpretation of discipline and field codes and explanatory notes on the
discipline composition.

TABLE II, 10

FULL-TIME UNIVERSITY TEACHERS,
BY FIELD & DISCIPLINE,
BY REGION, CANADA, 1973-74,
ROW PERCENTAGE DISTRIBUTION

FIELD & DISCIPLINE*	ATLANTIC REGION	QUEBEC	ONTARIO	WESTERN REGION	CANADA
H 1					100.0
2					
3	14.0	18.2	41.5	26.3	100.0
4	15.2	9.9	41.9	33.0	100.0
5	16.9	20.4	45.5	17.3	100.0
6					
7					
8	12.1	17.9	47.5	22.4	100.0
9					
10					
STH	13.2	17.2	45.6	24.0	100.0
S 1	14.4	29.3	29.0	27.5	100.0
2					
3	6.5	16.1	54.8	19.4	100.0
4	10.5	19.7	40.7	28.8	100.0
5	13.5	20.2	31.5	34.8	100.0
6					
7					
8	9.1	31.1	40.2	20.1	100.0
9	12.7	13.7	54.2	19.3	100.0
10	13.7	19.0	44.1	23.3	100.0
11	9.6	24.5	36.2	30.9	100.0
12	12.6	20.7	44.8	21.9	100.0
13					
STSS	11.6	21.9	38.7	27.8	100.0
STHS	12.2	20.1	41.3	26.4	100.0
FA	11.6	20.9	35.2	32.6	100.0
A	8.7	25.6	31.9	33.8	100.0
E	10.2	27.7	38.1	24.2	100.0
H	9.0	23.8	38.1	29.1	100.0
M	12.7	22.8	37.3	27.1	100.0
ST	10.4	24.5	36.8	28.4	100.0
T	11.4	22.0	39.2	27.4	100.0

*See Code Sheet for interpretation of discipline and field codes and explanatory notes on the discipline composition.

SOURCE: Statistics Canada, in co-operation with the Association of Universities and Colleges, Women in Canadian Universities: A Statistical Compendium, Table 1, Ottawa, 1975.

FIELD & DISCIPLINE OF TEACHING

- H 1 ARCHAEOLOGY
 2 CLASSICS
 3 HISTORY
 4 ENGLISH
 5 FRENCH
 6 OTHER MODERN LANGUAGES
 7 LINGUISTICS
 8 PHILOSOPHY
 9 RELIGIOUS STUDIES
 10 OTHERS

SUB-TOTAL HUMANITIES

- S 1 ADMINISTRATIVE STUDIES
 2 ANTHROPOLOGY
 3 COMMUNICATION STUDIES
 4 ECONOMICS
 5 EDUCATION
 6 GEOGRAPHY
 7 INTER-DISCIPLINARY STUDIES
 8 LAW
 9 POLITICAL SCIENCE
 10 PSYCHOLOGY
 11 SOCIAL WORK
 12 SOCIOLOGY
 13 OTHERS

SUB-TOTAL SOCIAL SCIENCES

SUB-TOTAL HUMAN SCIENCES

FA FINE AND APPLIED ARTS

A AGRICULTURE AND BIOLOGICAL

E ENGINEERING AND APPLIED SCIENCES

H HEALTH PROFESSIONS AND OCCUPATIONS

M MATHEMATICS AND PHYSICAL SCIENCES

SUB-TOTAL NATURAL SCIENCES

TOTAL

Note: The field sub-totals and total represent the summation of all disciplines within the specific fields.

However, only selected disciplines have actually been presented; the disciplines not presented are really in a non-labelled residual category. Therefore the disciplines reported in each of the fields will not necessarily equal the sub-totals and total presented here. In adding education and communication studies to the social sciences this sub-total has been adjusted to match this fact; likewise the humanities sub-total has been adjusted downward. Data is presented here for all university teachers, including those with senior administrative duties, those on leave of absence, and those not paid to a regular scale such as some teachers in denominational institutions. Random rounding has been utilized in this presentation.

TABLE II, 11

Citizenship of Full-time University Teachers in Canada, by Field, 1974-1975

Field	Canada	United States	United Kingdom	Other Commonwealth	France and Belgium	Other European	Other	Sub-total	Not Reported	Total
Humanities	3364	953	469	78	172	178	81	5295	345	5640
Social Sciences	6205	1651	491	250	202	190	208	9197	745	9942
Sub-total Human Sciences	9569	2604	960	328	374	368	289	14492	1090	15582
Fine Arts	618	272	78	10	15	28	14	1035	93	1128
Agric. & Biol. Sciences	1429	258	166	65	24	42	46	2030	194	2224
Engineering	1462	104	177	75	44	96	69	2027	235	2262
Health Professions	2719	222	338	120	33	104	108	3644	365	4009
Math & Physical Sciences	2414	401	409	182	69	175	103	3753	315	4068
Sub-total Natural Sciences	8024	985	1090	442	170	417	326	11454	1109	12563
Not Reported	323	108	66	12	10	17	14	550	223	773
Total	18534	3969	2194	792	569	830	643	27531	2515	30046

Table II, 11 (contd)

Field	Citizenship Distribution for Each Field *										Field Distribution for Each Country of Citizenship									
	Percentages																			
	Canada	United States	United Kingdom	Other Commonwealth	France and Belgium	Other European	Other	Canada	United States	United Kingdom	Other Commonwealth	France and Belgium	Other European	Other	Sub-total	Not Reported	Total			
Humanities Social Sciences	63.5	18.0	8.9	1.5	3.2	3.4	1.5	18.2	24.0	21.4	9.8	30.2	21.4	12.6	19.2		18.8			
	67.5	18.0	5.3	2.7	2.2	2.1	2.3	33.5	41.6	22.4	31.6	35.5	22.9	32.3	33.4		33.1			
Sub-total Human Sciences	66.0	18.0	6.6	2.3	2.6	2.5	2.0	51.6	65.6	43.8	41.4	65.7	44.3	44.9	52.6		51.9			
Fine Arts	59.7	26.3	7.5	1.0	1.4	2.7	1.4	3.3	6.9	3.6	1.3	2.6	3.4	2.2	3.8		3.8			
Agric. & Biol. Sciences Engineering	70.4	12.7	8.2	3.2	1.2	2.1	2.3	7.7	6.5	7.6	8.2	4.2	5.1	7.2	7.4		7.4			
	72.1	5.1	8.7	3.7	2.2	4.7	3.4	7.9	2.6	8.1	9.5	7.7	11.6	10.7	7.4		7.5			
Health Professions Math. & Physical Sciences	74.6	6.1	9.3	3.3	0.9	2.9	3.0	14.7	5.6	15.4	15.2	5.8	12.5	16.8	13.2		13.3			
	64.3	10.7	10.9	4.8	1.8	4.7	2.7	13.0	10.1	18.6	23.0	12.1	21.1	16.0	13.6		13.5			
Sub-total Natural Sciences	70.1	5.6	9.5	3.9	1.5	3.6	2.8	43.3	24.8	49.7	55.0	29.9	50.2	50.7	41.6		41.8			
Not Reported	58.7	19.6	12.0	2.2	1.8	3.1	2.5	1.7	2.7	3.0	1.5	1.8	2.0	2.2	2.0		2.6			
Total	67.3	14.4	8.0	2.9	2.1	3.0	2.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		100.0			

* relative to reported total

SOURCE: Statistics Canada, unpublished data.

TABLE II, 12
Citizenship of Full-time University Teachers (New Appointments) in Canada, by Field, 1974-1975

Field	Canada	United States	United Kingdom	Other Commonwealth	France and Belgium	Other European	Other	Sub-total	Not Reported	Total
Humanities	188	37	19	7	16	10	9	286	14	300
Social Sciences	678	211	69	28	123	18	29	1156	65	1121
Sub-total Human Sciences	866	248	88	35	139	28	38	1442	79	1521
Fine Arts	70	44	15	3	---	2	3	137	11	148
Agric. & Biol. Sciences	99	30	9	7	4	2	4	155	5	160
Engineering	72	14	11	5	1	6	3	112	10	122
Health Professions	270	40	36	12	3	10	22	393	28	421
Math & Physical Sciences	109	25	25	10	5	8	7	189	13	202
Sub-total Natural Sciences	550	109	81	34	13	26	36	849	56	905
Not Reported	128	65	42	6	4	11	9	265	121	386
Total	1614	466	226	78	156	67	86	2693	267	2960

Table II, 12 (contd)

Field	Citizenship Distribution for Each Field *							Field Distribution for Each Country of Citizenship							Sub-total	Not Reported	Total
	Canada	United States	United Kingdom	Other Commonwealth	France and Belgium	Other European	Other	Canada	United States	United Kingdom	Other Commonwealth	France and Belgium	Other European	Other			
Humanities	65.7	12.9	6.6	2.4	5.6	3.5	3.1	11.6	7.9	8.4	9.0	28.6	14.9	10.5	11.0	10.5	
Social Sciences	64.2	20.0	6.5	2.7	2.2	1.7	2.7	42.0	48.3	30.5	35.9	41.1	26.7	33.7	40.7	39.2	
Sub-total Human Sciences	64.5	18.5	6.6	2.6	2.9	2.1	2.8	53.7	53.2	38.9	44.9	69.6	41.8	44.2	51.8	49.7	
Fine Arts	51.1	32.1	10.9	2.2	0.0	1.5	2.2	4.3	9.4	6.6	3.8	0.0	3.0	3.5	5.3	5.2	
Agric. & Biol. Sciences	63.9	19.4	5.8	4.5	2.6	1.3	2.6	6.1	6.4	4.0	9.0	7.1	3.0	4.7	6.0	5.6	
Engineering	64.3	12.5	9.8	4.5	0.9	5.4	2.7	4.5	3.0	4.9	6.4	1.5	7.0	3.5	4.3	4.3	
Health Professions	68.7	10.2	9.2	3.1	0.8	2.5	5.6	16.7	8.6	15.9	15.4	5.4	14.9	28.6	15.2	14.7	
Math & Physical Sciences	57.7	13.2	13.2	5.3	2.6	4.2	3.7	6.8	5.4	11.1	12.8	8.9	11.9	8.1	7.3	7.1	
Sub-total Natural Sciences	64.8	12.8	9.5	4.0	1.5	3.1	4.2	34.1	23.4	35.8	43.8	23.2	38.8	41.9	32.7	31.6	
Not Reported	48.3	24.5	15.8	2.3	1.5	4.2	3.4	7.9	13.9	18.6	7.7	7.1	16.4	10.5	10.2	13.5	
Total	62.2	18.0	8.7	3.0	2.2	2.6	3.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	

* relative to reported total

SOURCE: Statistics Canada, unpublished data.

TABLE II-13

PERCENTAGE OF FULL-TIME UNIVERSITY TEACHERS WITH
CANADIAN CITIZENSHIP, BY RANK, BY REGION, 1974-75.

REGION	RANK			ALL RANKS
	FULL PROFESSOR	ASSOCIATE PROFESSOR	ASSISTANT PROFESSOR	
Atlantic	70.2	60.0	62.4	64.6
Quebec	82.8	72.7	73.8	76.1
Ontario	71.9	63.6	63.5	66.7
Western	67.8	59.4	56.7	60.8
Canada	73.1	64.4	64.4	67.4

SOURCE: Statistics Canada, unpublished information.

TABLE II, 14
RANK DISTRIBUTION OF FULL-TIME UNIVERSITY TEACHERS IN CANADA, BY REGION, 1973-74

REGION	RANK				
	PROFESSOR	ASSOCIATE PROFESSOR	ASSISTANT PROFESSOR	LECTURERS	OTHERS
Atlantic	534(16.5)	777(24.0)	1,344(41.6)	483(14.9)	93(2.9)
Québec	1,092(17.5)	1,866(29.9)	2,172(34.8)	678(10.9)	429(6.9)
Ontario	2,778(24.9)	3,477(31.2)	3,456(31.0)	1,092(9.8)	345(3.1)
Western	1,839(23.6)	2,616(33.6)	2,445(31.4)	411(5.3)	480(6.2)
Canada	6,243(22.0)	8,736(30.7)	9,417(33.1)	2,664(9.4)	1,347(4.7)
					TOTAL
					3,231
					6,237
					11,148
					7,794
					28,410

* figures in brackets are percentages.

SOURCE: Statistics Canada, unpublished data.

TABLE II-15

FULL-TIME UNIVERSITY TEACHERS AND THOSE WITH DOCTORAL DEGREE, BY REGION, BY RANK, CANADA, 1974-75, PERCENTAGE DISTRIBUTIONS

REGION	PERCENTAGE OF FULL-TIME UNIVERSITY TEACHERS HAVING DOCTORAL DEGREE					
	PROFESSOR		ASSOCIATE PROFESSOR		LECTURER & INSTRUCTOR	
	PROFESSOR	ASSOCIATE PROFESSOR	ASSOCIATE PROFESSOR	LECTURER & INSTRUCTOR	OTHER	TOTAL
Atlantic Region	70.8	60.2	40.6	7.9	60.0	45.5
Quebec	74.3	70.5	47.2	5.7	42.4	55.0
Ontario	76.4	73.4	52.9	9.1	17.9	58.5
Western Region	76.7	72.2	54.5	9.3	36.7	62.2
Canada	75.6	71.2	50.2	8.2	30.6	57.3

REGION	ROW PERCENTAGES							
	FACULTY WITH DOCTORATE				ALL FACULTY			
	PROFESSOR	ASSOCIATE PROFESSOR	ASSISTANT PROFESSOR	LECTURER & INSTRUCTOR	OTHER	TOTAL	PROFESSOR	TOTAL
Atlantic Region	25.7	33.7	36.9	2.8	1.0	100.0	16.5	100.0
Quebec	24.8	39.5	27.9	1.0	6.8	100.0	18.4	100.0
Ontario	32.2	38.8	25.4	1.5	2.2	100.0	24.7	100.0
Western Region	30.8	39.5	24.9	.9	3.9	100.0	25.0	100.0
Canada	29.7	38.7	26.8	1.3	3.5	100.0	22.5	100.0

REGION	COLUMN PERCENTAGES							
	FACULTY WITH DOCTORATE				ALL FACULTY			
	PROFESSOR	ASSOCIATE PROFESSOR	ASSISTANT PROFESSOR	LECTURER & INSTRUCTOR	OTHER	TOTAL	PROFESSOR	TOTAL
Atlantic Region	7.7	7.7	12.2	18.6	2.5	8.9	8.2	11.1
Quebec	17.6	21.4	21.9	15.9	40.3	21.0	13.3	21.9
Ontario	44.5	41.1	38.9	45.6	25.1	41.0	44.1	40.2
Western Region	30.3	29.8	27.0	19.9	32.1	29.1	29.9	26.3
Canada	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Statistics Canada, unpublished data.

TABLE II-16

PERCENTAGE OF FULL-TIME UNIVERSITY TEACHERS
WITH DOCTORATE, BY FIELD, BY RANK, CANADA, 1974-75

FIELD	PROFESSOR	ASSOCIATE PROFESSOR	ASSISTANT PROFESSOR	LECTURERS, INSTRUCTORS & OTHERS	TOTAL
Humanities	82.5	78.3	53.1	18.4	62.5
Social sciences	74.7	69.7	46.7	11.4	52.1
Sub-total: human sciences	77.7	73.0	48.9	13.5	55.9
Fine arts	37.4	24.6	17.5	3.1	18.4
Agric. & biological sciences	89.8	83.3	74.0	32.2	76.5
Engineering	70.2	66.0	52.3	16.4	58.9
Health sciences	47.7	46.9	34.9	14.6	37.7
Math. & physical sciences	94.1	91.0	75.5	43.3	82.1
Sub-total: natural sciences	75.8	72.9	56.2	26.2	62.8
Others & not reported	63.8	67.2	23.5	13.2	45.0
TOTAL	75.6	71.2	50.2	17.5	57.5

SOURCE: Statistics Canada, unpublished data.

APPENDIX III

Tables III, 1-57.4

UNIVERSITIES WITH GRADUATE PROGRAMS,
BY PROVINCE & REGION, CANADA, 1975-76*†

REGION, PROVINCE & NAME OF UNIVERSITY	GRADUATE PROGRAM	REGION, PROVINCE & NAME OF UNIVERSITY	GRADUATE PROGRAM
Memorial Univ. of Newfoundland	x	Brock University	x
University of P.E.I.		Carleton University	x
Acadia University	x	University of Guelph	x
Atlantic School of theology	x	Lakehead University	x
College Ste-Anne		Laurentian University	x
College of Cape Breton		McMaster University	x
Dalhousie University	x	Université d'Ottawa	x
Mount St. Vincent University	x	Ontario Bible College	
Nova Scotia Col. of Art & Design	x	Queen's University	x
Nova Scotia Technical College	x	University of Toronto	x
St. Francis Xavier University	x	Sir Wilfrid Laurier University	x
St. Mary's University		Trent University	x
(includes Regis Colleges)	x	University of Waterloo	x
University of King's College		University of Western Ontario	x
Atlantic Institute of Education	x	University of Windsor	x
NOVA SCOTIA	10 of 14 (71%)	York University	x
		Royal Military College	x
Mount Allison University	x	Collège Dominicain de philosophie et théologie	x
University of New Brunswick	x	Ryerson Polytechnical Institute	
St. Thomas University		Université Saint-Paul	x
Université de Moncton	x	ONTARIO	18 of 20 (90%)
NEW BRUNSWICK	3 of 4 (75%)		
		Brandon	
ATLANTIC REGION	13 of 18 (72%)	Canadian Mennonite Bible Col.	
		Canadian Nazarene College	
Bishop's University	x	University of Manitoba	x
Concordia University	x	Mennonite Brethern College of Arts	
McGill University	x	University of Winnipeg	
ANGLOPHONE QUEBEC	3 of 3 (100%)	MANITOBA	1 of 6 (17%)
		University of Regina	x
Université de Montréal	x	University of Saskatchewan	x
Université du Québec	x	SASKATCHEWAN	2 of 2 (100%)
Université Laval	x		
Université de Sherbrooke	x	Athabasca University	
FRANCOPHONE QUEBEC	4 of 4 (100%)	University of Alberta	x
		University of Calgary	x
QUEBEC	7 of 7 (100%)	University of Lethbridge	
		ALBERTA	2 of 4 (50%)
*Includes affiliated institutions.		University of British Columbia	x
† The universities represented here		Notre-Dame Univ. of Nelson	
grant degrees on their own right and		Seminary of Christ the King	
were doing so for the year 1974-75.		Simon Fraser University	x
Those institutions which have held		University of Victoria	x
this right in abeyance and have allowed		Vancouver School of Theology	x
the institutions to which they were		BRITISH COLUMBIA	4 of 6 (67%)
affiliated to grant their degrees,			
have been included under the latter.		WESTERN REGION	9 of 18 (50%)
SOURCE: Statistics Canada & Association			
of Universities & Colleges of		CANADA	47 of 63 (75%)
Canada, <u>Universities and</u>			
<u>Colleges of Canada 1975,</u>			
Information Canada, Ottawa,			
1975.			

UNIVERSITIES WITH GRADUATE PROGRAMS, BY REGION, CANADA, 1975-76

REGION	# OF UNIVERSITIES *	# OF GRADUATE PROGRAMS *
Atlantic	18 (28.6)	13 (27.7)
Québec	7 (11.1)	7 (14.9)
Ontario	20 (31.7)	18 (38.3)
Western	18 (28.6)	9 (19.1)
Canada	63 (100.0)	47 (100.0)

* percentage distribution in brackets.

Table no III, 2
MASTERS' PROGRAMS 1974-75

UNIVERSITY	DISCIPLINE & FIELD	Archaeology	Classics	History	English language & literature	French language & literature	Other modern languages & literature	Linguistics	Philosophy	Religious studies	SUB-TOTAL: HUMANITIES	Administrative studies	Anthropology	Communication studies	Economics	Education	Geography	Inter-disciplinary studies	Law	Political science	Psychology	Social work	Sociology	SUB-TOTAL: SOCIAL SCIENCES	SUB-TOTAL: HUMAN SCIENCES
Memorial				x	x	x	x	x	x	6		x			x	x	x			x	x		x	7	13
Acadia			x	x	x	x			x	5					x	x	x			x	x			4	9
Atlantic School of Theology										x	1													0	1
Dalhousie			x	x	x	x	x		x	6	x	x	x	x	x	x			x	x	x	x	x	10	16
Mount St. Vincent										0						x								1	1
Nova Scotia Coll. of Art & Design										0														0	0
Nova Scotia Technical College										0														0	0
St. Francis Xavier																x		x						2	2
St. Mary's				x					x	x	1					x								1	4
Atlantic Institute of Education																								1	1
Mount Allison										0						x								1	1
New Brunswick		x	x	x	x	x	x		x	7		x			x	x				x	x		x	7	13
Moncton			x	x	x	x			x	3	x				x	x							x	4	7
Bishop's				x	x	x			x	4		x			x	x								1	4
Concordia				x	x	x			x	4	x	x			x	x							x	6	10
McGill			x	x	x	x	x	x	x	8	x	x	x	x	x	x	x	x	x	x	x	x	x	12	20
Montréal			x	x	x	x	x	x	x	8	x	x	x	x	x	x	x	x	x	x	x	x	x	12	20
Du Québec				x	x	x	x	x	x	4	x	x			x	x				x	x	x	x	5	9
Laval	x	x	x	x	x	x	x	x	x	9	x	x			x	x	x	x	x	x	x	x	x	11	20
Sherbrooke				x	x	x			x	4	x				x	x				x				7	11
Brock									x	1										x				1	2
Carleton			x	x	x	x	x		x	6					x		x	x		x	x	x	x	7	13
Guelph					x	x			x	3					x		x				x			3	9
Lakeland				x	x	x				2					x						x			2	4
Laurentian				x	x	x				2														0	2
McMaster			x	x	x	x	x		x	7	x	x			x	x	x	x		x	x	x	x	9	16
Ottawa	x	x	x	x	x	x	x		x	9	x				x	x	x	x	x	x	x	x	x	9	18
Queen's			x	x	x	x	x	x	x	6	x				x	x	x	x	x	x	x	x	x	8	14
Toronto	x	x	x	x	x	x	x	x	x	9	x	x	x	x	x	x	x	x	x	x	x	x	x	12	21
Sir Wilf. Laurier				x	x	x				3								x		x	x	x		4	7
Trent				x						1			x											1	2
Waterloo					x	x	x		x	5	x				x	x	x	x		x	x		x	8	13
Western Ontario			x	x	x	x	x		x	7	x			x	x	x	x			x	x	x	x	8	15
Windsor				x	x	x			x	5	x				x	x	x				x	x	x	6	13
York				x	x				x	3					x					x				3	9
Royal Military Col.										1						x				x				2	3
Collège Dominicain de Phil. & de Théol.									x	x	2													0	2
Saint-Paul									x	x	1													0	1
Manitoba			x	x	x	x	x		x	6	x	x			x	x	x	x	x	x	x	x	x	11	17
Regina				x	x	x	x		x	4				x	x	x	x	x	x	x	x	x	x	7	11
Saskatchewan			x	x	x	x	x		x	6	x	x			x	x	x	x	x	x	x	x	x	10	16
Alberta	x	x	x	x	x	x	x	x	x	8	x	x	x	x	x	x	x	x	x	x	x	x	x	11	19
Calgary	x	x	x	x	x	x	x	x	x	7	x	x	x	x	x	x	x	x	x	x	x	x	x	8	15
British Columbia		x	x	x	x	x	x	x	x	8	x	x	x	x	x	x	x	x	x	x	x	x	x	12	20
Simon Fraser	x	x	x	x	x	x	x	x	x	7	x	x	x	x	x	x	x	x	x	x	x	x	x	8	15
Victoria			x	x	x	x			x	6					x	x	x			x	x		x	7	13
Vancouver School of Theology										x	1													0	1
TOTAL		6	17	36	29	26	19	12	31	20		20	17	8	31	31	21	17	13	29	30	13	25		

Table no III,2.1
DOCTORATE PROGRAMS 1974-75

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UNIVERSITY	DISCIPLINE & FIELD	Archaeology	Classics	History	English language & literature	French language & literature	Other modern languages & literature	Linguistics	Philosophy	Religious studies	SUB-TOTAL: HUMANITIES	Administrative studies	Anthropology	Communication studies	Economics	Education	Geography	Inter-disciplinary studies	Law	Political science	Psychology	Social work	Sociology	SUB-TOTAL: SOCIAL SCIENCES	SUB-TOTAL: HUMAN SCIENCES
Memorial					x						1													0	1
Acadia											0													0	0
Atlantic School of Theology											0													0	0
Dalhousie			x		x						2				x						x	x			5
Mount St. Vincent											0													0	0
Nova Scotia Coll. of Art & Design											0													0	0
Nova Scotia Tech. College											0													0	0
St. Francis Xavier											0													0	0
St. Mary's											0													0	0
Atlantic Inst. of Education											0					x								1	1
Mount Allison											0													0	0
New Brunswick			x		x						2													0	2
Moncton											0													0	0
Bishop's											0													0	0
Concordia			x								1				x									1	2
McGill		x	x		x		x	x	x	x	8		x		x	x	x	x	x	x	x		x	9	17
Montréal		x	x		x		x	x	x	x	7		x		x	x	x	x	x	x	x		x	10	17
Univ. du Québec											1				x	x	x	x	x	x	x	x		10	1
Laval		x	x		x		x	x	x	x	7	x	x		x	x	x	x	x	x	x		x	10	17
Sherbrooke					x						1													0	1
Brock											0													0	0
Carleton											0				x					x	x		x	4	4
Guelph			x						x		2							x						1	3
Lakehead											0													0	0
Laurentian											0													0	0
McMaster				x					x	x	4		x		x		x			x	x		x	6	10
Ottawa	x	x	x		x		x		x	x	7				x	x	x		x	x	x			6	13
Queen's			x		x		x		x	x	5				x	x	x		x	x	x			3	8
Toronto	x	x	x		x		x		x	x	9	x	x	x	x	x	x	x	x	x	x	x	x	12	21
Sir Wilf. Laurier											0													0	0
Trent											0													0	0
Waterloo				x			x		x		3	x				x	x				x		x	5	8
Western Ontario		x	x		x		x		x		6	x		x	x					x	x			6	12
Windsor											0										x			1	1
York			x		x				x		3								x	x	x		x	4	7
Royal Military Col											0													0	0
Col. Dominicain de Phil. & de Théo.										x	1													0	1
Saint-Paul									x	x	2													0	2
Manitoba			x		x						3				x		x				x			4	7
Regina											0										x			1	1
Saskatchewan			x		x						2				x		x	x			x		x	6	8
Alberta		x	x		x		x		x		7		x		x	x	x	x			x		x	8	15
Calgary	x				x		x		x		3				x	x	x	x			x			4	7
British Columbia		x	x		x		x		x		7	x	x		x	x	x	x		x	x		x	9	16
Simon Fraser	x		x		x		x				5		x		x		x	x		x	x		x	6	11
Victoria					x						1					x	x				x			3	4
Vancouver School of Theology											0													0	0

MASTERS' & DOCTORATE PROGRAMS IN THE HUMAN SCIENCES IN CANADA 1974-75, BY DISCIPLINE & FIELD *

DISCIPLINE & FIELD	NUMBER OF UNIVERSITIES HAVING MASTERS' DEGREE PROGRAMS	NUMBER OF UNIVERSITIES HAVING DOCTORAL DEGREE PROGRAMS
Archaeology	6 (12.8)	4 (8.5)
Classics	17 (36.2)	8 (17.0)
History	36 (76.6)	19 (40.4)
English language & literature	29 (61.7)	18 (38.3)
French language & literature	26 (55.3)	11 (23.4)
Other modern languages & literature	19 (40.4)	9 (19.1)
Linguistics	12 (25.5)	7 (14.9)
Philosophy	31 (66.0)	16 (34.0)
Religious studies	20 (42.6)	8 (17.0)
SUB-TOTAL: HUMANITIES	41 (87.2)	26 (55.3)
Administrative studies	20 (42.6)	5 (10.6)
Anthropology	17 (36.2)	8 (17.0)
Communication studies	8 (17.0)	2 (4.3)
Economics	31 (66.0)	17 (36.2)
Education	31 (66.0)	11 (23.4)
Geography	24 (51.1)	15 (31.9)
Inter-disciplinary studies	17 (36.2)	9 (19.1)
Law	13 (27.7)	6 (12.8)
Political science	29 (61.7)	15 (31.9)
Psychology	30 (63.8)	21 (44.7)
Social Work	13 (27.7)	2 (4.3)
Sociology	25 (53.2)	12 (25.5)
SUB-TOTAL: SOCIAL SCIENCES	41 (87.2)	24 (51.1)
TOTAL: HUMAN SCIENCES	45 (95.7)	30 (63.8)

* Numbers in brackets refer to the percentage of universities having masters' or doctoral degree programs.

Table no III, 4

Comparison of discipline offerings by Canadian universities,
at the masters and doctoral levels, 1974-75

NUMBER OF HUMAN SCIENCE DISCIPLINES	UNIVERSITIES OFFERING THESE DISCIPLINES AT THE			
	MASTERS LEVEL		DOCTORAL LEVEL	
	Number	%	Number	%
0	2	4.3	17	36.2
1	6	12.8	7	14.9
2-5	8	17.0	7	14.9
6-10	9	19.1	7	14.9
11-15	11	23.4	4	8.5
16-20	10	21.3	4	8.5
21	1	2.1	1	2.1
	47	100.0	47	100.0

Notes to tables III,2 - III,2.1 - III,3 - III,4

Source: Statistics Canada & Association of Universities & Colleges of Canada, Universities and Colleges of Canada 1975, Information Canada, Ottawa, 1975, p. 491-554.

All disciplines are taken as is from this source, except for the following:

Classics includes classics, and latin and greek language & literature.

Other Modern Languages includes only German, Russian and Chinese, which are the largest disciplines within the Western European, Slavic and Asian Language groupings.

Religious Studies includes all sub disciplines listed under "religious studies" p. 512-514.

Administrative studies includes all sub-disciplines under business, commerce, and administration, listed on p. 515-517, but excludes public administration and consumer studies.

Communication studies includes library science p. 510 and journalism p. 503-504.

Education includes education (p. 518-522) and physical education (p. 525-526).

Interdisciplinary studies includes Area studies (international studies p. 502-503), Canadian and Indian Eskimo studies (p. 502) and Urban and regional studies (p. 551-552).

Table no III.5

CONTRIBUTION OF THE HIGHER EDUCATION SYSTEM
TO THE PERFORMANCE OF FUNDAMENTAL AND
FUNDAMENTAL AND APPLIED RESEARCH

		FUNDAMENTAL RESEARCH	FUNDAMENTAL + APPLIED RESEARCH
		Expenditure in higher education system as % of total fundamental research expenditure	Expenditure in higher education system as % of total fundamental and applied research expenditure
Austria	1963	61.7	41.1
Belgium	1963	49.8	26.9
	1967	76.9	48.0
	1969	73.2 ¹	42.6 ¹
Canada	1967	53.2	29.6
	1969	62.5	33.4
France	1965	63.0	24.8
	1967	64.6	24.6
	1969	62.3*	28.5
Germany	1963	66.9	..
	1967	53.5	..
Greece	1964	27.2	11.4
	1966	43.4	22.4
	1969	29.7	15.4
Ireland	1963	89.0	20.0
	1967	86.8	27.3
	1969	85.4	27.8
Italy	1963	44.9	24.2
	1967	32.4	18.4
	1969	41.3 ¹	31.3 ¹
Japan	1965	65.4	40.0
	1967	63.5	39.8
Netherlands	1964	45.5	28.0
	1967	--	36.1
	1969	..	28.2
Norway	1963	67.2	35.5
	1967	74.7	43.2
	1969	77.0	46.6
Sweden	1964	83.7	..
	1967	87.3	..
	1969	86.9*	43.0
United Kingdom	1964-65	45.1	17.1
	1967-68	36.3	17.9
	1968	38.0	22.5
USA	1953	42.2	..
	1966	58.6	30.7
	1969	61.8 ²	32.3 ²

-- No corresponding data.

.. Data not available.

* Estimates.

1. Data not comparable to those for 1967.

2. Including social sciences.

SOURCE: Organization for Economic Cooperation and Development,
Structure of Studies and Place of Research in Mass Higher
Education, Paris, 1974, p. 60.

FULL-TIME UNIVERSITY ENROLMENT, BY LEVEL OF DEGREE, BY FIELD OF STUDY,
CANADA, 1967-68, 1974-75; PERCENTAGE DISTRIBUTIONS

	1967-68			1974-75		
	FULL-TIME UNDERGRADUATE ENROLMENT	FULL-TIME GRADUATE ENROLMENT	TOTAL FULL-TIME ENROLMENT	FULL-TIME UNDERGRADUATE ENROLMENT	FULL-TIME GRADUATE ENROLMENT	TOTAL FULL-TIME ENROLMENT
Human sciences	158,350	13,076	171,426	162,924	19,644	182,568
Fine arts	1,942	76	2,018	6,981	461	7,442
Natural sciences	74,284	10,554	84,838	94,851	10,336	105,187
Other & unclassified	2,444	481	2,925	23,250	855	24,105
TOTAL	237,020	24,187	261,207	288,006	31,296	319,302

% BY LEVEL

	1967-68			1974-75		
	FULL-TIME UNDERGRADUATE ENROLMENT	FULL-TIME GRADUATE ENROLMENT	TOTAL FULL-TIME ENROLMENT	FULL-TIME UNDERGRADUATE ENROLMENT	FULL-TIME GRADUATE ENROLMENT	TOTAL FULL-TIME ENROLMENT
Human sciences	66.8	54.1	65.6	56.6	62.8	57.2
Fine arts	0.8	0.3	0.8	2.4	1.5	2.3
Natural sciences	31.3	43.6	32.5	32.9	33.0	32.9
Other & unclassified	1.0	2.0	1.1	8.1	2.7	7.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

% BY LEVEL

	1967-68			1974-75		
	FULL-TIME UNDERGRADUATE ENROLMENT	FULL-TIME GRADUATE ENROLMENT	TOTAL FULL-TIME ENROLMENT	FULL-TIME UNDERGRADUATE ENROLMENT	FULL-TIME GRADUATE ENROLMENT	TOTAL FULL-TIME ENROLMENT
Human sciences	92.4	7.6	100.0	89.2	10.8	100.0
Fine arts	96.2	3.8	100.0	93.8	6.2	100.0
Natural sciences	87.6	12.4	100.0	90.2	9.8	100.0
Other & unclassified	83.6	16.4	100.0	96.5	3.5	100.0
TOTAL	90.7	9.3	100.0	90.2	9.8	100.0

SOURCE: Dominion Bureau of Statistics, Survey of Higher Education, Ottawa,
and Statistics Canada, unpublished data.

Total number of full-time and part-time graduate students enrolled in universities in Canada, 1940-41 to 1974-75, including growth indexes and annual percentage changes and growth rates

YEAR	TOTAL GRADUATE ENROLMENT (MASTERS PLUS DOCTORAL)					
	FULL-TIME			PART-TIME		
	NUMBER OF STUDENTS	INDEX 1961-62=100.0	ANNUAL Δ PER CENT	NUMBER OF STUDENTS	INDEX 1961-62=100.0	ANNUAL Δ PER CENT
1940-41	1,755	22.9	-	249	6.0	-
1945-46	1,609	21.0	-	398	9.6	-
1950-51	4,270	55.7	-	289	7.0	-
1955-56	3,127	40.8	-	N.A.	N.A.	N.A.
1960-61	6,518	85.0	-	4,378	85.0	-
1961-62	7,668	100.0	17.6	5,150	100.0	17.6
1962-63	8,436	110.0	10.0	5,659	109.8	9.8
1963-64	11,133	145.2	31.0	6,498	126.2	14.8
1964-65	13,797	179.9	23.9	7,268	141.1	11.8
1965-66	17,196	224.3	24.6	7,724	150.0	6.7
1966-67	19,719	257.2	14.7	10,111	196.3	30.9
1967-68	24,187	315.4	22.7	10,696	207.7	5.8
1968-69	26,120	340.6	8.0	10,484	203.6	-2.0
1969-70	30,231	394.2	15.7	13,719	266.4	30.9
1970-71	30,815	401.9	1.9	12,815	248.8	-6.6
1971-72*	31,034	404.7	7.1	15,467	300.3	20.7
1972-73	29,327	382.5	-5.5	17,530	340.4	13.3
1973-74	29,540	385.2	0.7	20,192	392.1	15.2
1974-75	31,296	408.1	5.9	20,970	407.2	3.9

GROWTH RATE (Constant Annual)	
1940-41 to 1950-51	8.4
1950-51 to 1960-61	4.3
1960-61 to 1970-71	16.8
1970-71 to 1972-73	-2.4
1940-41 to 1970-71	10.0
1970-71 to 1974-75	0.4

*Excludes Newfoundland.

†Part-time enrolment estimates are based on the growth rates of full-time enrolment for comparable years.

SOURCE: Statistics Canada, Fall Enrolment in Universities and Colleges, (Ottawa: Information Canada), and unpublished data.

Total number of full-time doctoral students enrolled in universities in Canada and the regions,
by field of study, 1970-71 to 1974-75, including annual percentage distribution by field

FIELD OF STUDY BY YEAR OF ENROLMENT	ATLANTIC		QUEBEC		ONTARIO		WESTERN		CANADA	
	ENROLMENT	%	ENROLMENT	%	ENROLMENT	%	ENROLMENT	%	ENROLMENT	%
Humanities										
1970-71	65	17.3	346	19.3	1,147	22.1	365	13.1	1,923	19.0
1971-72	78*	23.2	325	19.7	1,204	23.1	385	14.0	1,992*	20.0
1972-73	65	16.4	468	23.4	1,208	24.2	362	13.6	2,103	20.9
1973-74	73	21.7	355	20.8	1,173	23.9	323	13.5	1,924	20.6
1974-75	76	22.5	454	23.5	1,190	24.4	258	11.6	1,978	21.1
Social Sciences										
1970-71	32	8.5	452	25.2	1,417	27.3	632	22.8	2,533	25.0
1971-72	41*	12.2	442	26.8	1,508	28.9	677	24.5	2,668*	26.8
1972-73	21	5.3	646	32.3	1,500	30.1	745	28.0	2,912	29.0
1973-74	33	9.8	535	31.4	1,660	33.8	726	30.3	2,954	31.6
1974-75	46	13.6	625	32.3	1,674	34.4	698	31.3	3,043	32.5
Human Sciences										
1970-71	97	25.9	798	44.4	2,564	49.4	997	35.9	4,456	43.9
1971-72	119*	35.4	767	46.5	2,712	51.9	1,062	38.5	4,660*	46.8
1972-73	86	21.7	1,114	55.6	2,708	54.3	1,107	41.6	5,015	49.9
1973-74	106	31.5	811	47.6	2,883	58.8	1,049	43.8	4,878	52.2
1974-75	122	36.1	1,079	55.8	2,864	58.8	956	42.9	5,021	53.6
Total (all fields)										
1970-71	375	100.0	1,796	100.0	5,192	100.0	2,778	100.0	10,141	100.0
1971-72	336*	100.0	1,650	100.0	5,222	100.0	2,759	100.0	9,967*	100.0
1972-73	396	100.0	2,002	100.0	4,991	100.0	2,659	100.0	10,048	100.0
1973-74	336	100.0	1,703	100.0	4,806	100.0	2,397	100.0	9,342	100.0
1974-75	338	100.0	1,932	100.0	4,873	100.0	2,228	100.0	9,371	100.0
Humanities										
Social Sciences	16.9		31.2							
Human Sciences	43.8		38.3							
Total	25.8		35.2							
	- 9.9		7.6							
*Excludes Newfoundland										
SOURCE: Statistics Canada, Full Enrolment in Universities and Colleges, Cat. no. 81-204 (Ottawa: Information Canada), and unpublished data.										

Total number of full-time masters students enrolled in universities in Canada and the regions, by field of study, 1970-71 to 1974-75, including annual percentage distribution by regions and growth rates

FIELD OF STUDY BY YEAR OF ENROLMENT	ATLANTIC		QUEBEC		ONTARIO		WESTERN		CANADA	
	ENROLMENT	%	ENROLMENT	%	ENROLMENT	%	ENROLMENT	%	ENROLMENT	%
Humanities										
1970-71	293	20.1	884	18.1	1,721	19.8	796	14.1	3,694	17.9
1971-72	268*	21.0	976	17.4	1,650	19.6	850	14.7	3,744*	17.8
1972-73	313	21.2	987	20.1	1,604	21.0	742	14.2	3,646	18.9
1973-74	268	18.9	936	17.1	1,550	19.0	662	12.8	3,416	16.9
1974-75	290	17.5	1,078	17.1	1,747	19.6	599	11.9	3,714	16.9
Social Sciences										
1970-71	657	45.0	2,397	49.1	4,031	46.5	2,736	48.4	9,821	47.5
1971-72	597*	46.8	2,724	48.5	4,026	47.9	2,754	47.7	10,101*	47.9
1972-73	686	46.6	2,569	52.2	3,611	47.2	2,582	49.3	9,448	49.0
1973-74	731	51.6	2,843	52.1	4,162	51.0	2,633	51.1	10,369	51.3
1974-75	932	56.2	3,323	52.7	4,224	47.3	2,430	48.2	10,909	49.8
Human Sciences										
1970-71	930	63.7	3,281	67.2	5,752	66.3	3,552	62.8	13,515	65.4
1971-72	865*	67.8	3,700	65.9	5,676	67.5	3,604	62.5	13,845*	65.7
1972-73	999	67.8	3,556	72.3	5,215	68.2	3,324	63.5	13,094	67.9
1973-74	999	70.5	3,779	69.2	5,712	69.9	3,295	63.9	13,785	68.2
1974-75	1,222	73.7	4,401	69.8	5,971	66.9	3,029	60.1	14,623	66.7
Total (all fields)										
1970-71	1,460	100.0	4,879	100.0	8,677	100.0	5,658	100.0	20,674	100.0
1971-72	1,275*	100.0	5,612	100.0	8,410	100.0	5,770	100.0	21,067*	100.0
1972-73	1,473	100.0	4,918	100.0	7,650	100.0	5,238	100.0	19,279	100.0
1973-74	1,417	100.0	5,460	100.0	8,166	100.0	5,155	100.0	20,198	100.0
1974-75	1,659	100.0	6,303	100.0	8,921	100.0	5,042	100.0	21,925	100.0
Humanities										
1970-71	-1.0		21.9		1.5		-24.7		0.5	
1971-72	41.9		38.6		4.8		-11.2		11.1	
Social Sciences										
1970-71	31.4		34.1		3.8		-14.7		8.2	
1971-72	13.6		29.2		2.8		-10.9		6.1	

*Excludes Newfoundland.

SOURCE: Statistics Canada, Fall Enrolment in Universities and Colleges, Cat. no. 81-204 (Ottawa: Information Canada), and unpublished data.

Total number of part-time masters students enrolled in universities in Canada and the regions, by field of study, 1970-71 to 1974-75, including annual percentage distribution by regions and growth rates

FIELD OF STUDY BY YEAR OF ENROLMENT	ATLANTIC		QUEBEC		ONTARIO		WESTERN		CANADA	
	ENROLMENT	%	ENROLMENT	%	ENROLMENT	%	ENROLMENT	%	ENROLMENT	%
Humanities										
1970-71	79	13.4	774	25.5	852	17.1	313	18.0	2,018	19.5
1971-72	38*	9.4	953	21.9	912	16.2	317	15.4	2,220*	17.9
1972-73	105	19.2	1,215	23.3	915	14.8	293	14.4	2,528	18.1
1973-74	137	15.6	1,183	19.9	862	12.6	320	11.0	2,502	15.3
1974-75	107	11.4	906	15.8	844	11.5	406	12.6	2,263	13.1
Social Sciences										
1970-71	409	69.4	1,614	53.3	3,478	69.9	1,056	60.8	6,557	63.5
1971-72	312*	77.2	2,284	52.5	3,863	68.6	1,283	62.5	7,742*	62.3
1972-73	312	57.0	3,005	57.7	4,149	67.2	1,342	65.8	8,808	63.1
1973-74	591	67.5	3,343	56.3	4,705	68.6	1,874	64.7	10,513	64.3
1974-75	528	56.4	3,600	62.8	4,991	67.9	2,189	68.2	11,308	65.6
Human Sciences										
1970-71	488	82.0	2,388	78.8	4,330	87.0	1,369	78.8	8,575	83.0
1971-72	350*	86.6	3,237	74.4	4,775	84.8	1,600	78.0	9,562*	80.1
1972-73	417	76.2	4,220	81.0	5,064	82.0	1,635	80.1	11,336	81.1
1973-74	728	83.1	4,526	76.2	5,567	81.2	2,194	75.8	13,015	79.5
1974-75	635	67.8	4,506	78.7	5,835	79.4	2,595	80.8	13,571	78.8
Total (all fields)										
1970-71	589	100.0	3,030	100.0	4,976	100.0	1,738	100.0	10,333	100.0
1971-72	404*	100.0	4,348	100.0	5,630	100.0	2,052	100.0	12,434*	100.0
1972-73	547	100.0	5,207	100.0	6,178	100.0	2,041	100.0	13,973	100.0
1973-74	876	100.0	5,936	100.0	6,854	100.0	2,896	100.0	16,362	100.0
1974-75	937	100.0	5,729	100.0	7,347	100.0	3,212	100.0	17,225	100.0
Humanities										
Social Sciences	35.4		17.1		- 0.9		29.7		12.1	
Human Sciences	29.1		123.0		43.5		107.3		72.5	
Human Sciences	30.1		88.7		34.8		89.6		58.3	
Total	59.1		89.1		47.6		84.8		66.7	

*Excludes Newfoundland.

SOURCE: Statistics Canada, Fall Enrolment in Universities and Colleges, Cat. no 81-204 (Ottawa: Information Canada), and unpublished data.

Table no III, 8.1

Total number of part-time doctoral students enrolled in universities in Canada and the regions, by field of study, 1970-71 to 1974-75, including annual percentage distribution by regions and growth rates

FIELD OF STUDY BY YEAR OF ENROLMENT	ATLANTIC		QUEBEC		ONTARIO		WESTERN		CANADA	
	ENROLMENT	ANNUAL DISTRIBUTION BY FIELD %	ENROLMENT	ANNUAL DISTRIBUTION BY FIELD %	ENROLMENT	ANNUAL DISTRIBUTION BY FIELD %	ENROLMENT	ANNUAL DISTRIBUTION BY FIELD %	ENROLMENT	ANNUAL DISTRIBUTION BY FIELD %
Humanities										
1970-71	6	15.4	352	37.8	364	33.7	99	22.9	821	33.1
1971-72	2*	8.3	338	31.4	523	36.3	121	24.6	984*	32.4
1972-73	5	6.1	398	33.6	605	33.8	129	25.7	1,137	32.0
1973-74	10	17.2	434	30.3	596	33.3	105	19.2	1,148	30.0
1974-75	13	22.4	286	26.1	565	28.8	132	20.9	996	26.6
Social Sciences										
1970-71	4	10.3	362	38.9	436	40.4	182	42.1	984	39.6
1971-72	3*	12.5	427	39.7	569	39.5	230	46.7	1,229*	40.5
1972-73	3	3.7	434	36.6	764	42.7	241	48.0	1,442	40.5
1973-74	9	15.5	628	43.8	772	43.1	280	51.1	1,689	44.1
1974-75	11	19.0	517	47.3	904	46.1	321	50.8	1,753	46.8
Humanities & Social Sciences										
1970-71	10	25.6	714	76.6	800	74.1	281	65.0	1,805	72.7
1971-72	5*	20.8	765	71.1	1,092	75.8	351	71.3	2,213*	73.0
1972-73	8	9.8	832	70.2	1,369	76.6	370	73.7	2,579	72.5
1973-74	19	32.7	1,065	74.3	1,368	76.4	385	70.3	2,837	74.1
1974-75	24	41.4	803	73.4	1,469	74.9	453	71.7	2,749	73.4
Total (all fields)										
1970-71	39	100.0	932	100.0	1,079	100.0	432	100.0	2,482	100.0
1971-72	24*	100.0	1,076	100.0	1,441	100.0	492	100.0	3,033*	100.0
1972-73	82	100.0	1,185	100.0	1,788	100.0	502	100.0	3,557	100.0
1973-74	58	100.0	1,433	100.0	1,791	100.0	548	100.0	3,830	100.0
1974-75	58	100.0	1,094	100.0	1,961	100.0	632	100.0	3,745	100.0
Δ PER CENT 1970-71 to 1974-75										
Humanities										
Social Sciences	116.7		-18.8		55.2		33.3		21.3	
Humanities & Social Sciences	175.0		42.8		107.3		76.4		78.2	
Humanities	140.0		12.5		83.6		61.2		52.3	
Social Sciences	48.7		17.4		81.7		46.3		50.9	
Total										

*Excludes Newfoundland.

SOURCE: Statistics Canada, Fall Enrolment in Universities and Colleges, Cat. no. 81-204 (Ottawa: Information Canada), and unpublished data.

Total number of full-time graduate students enrolled in universities in Canada and the regions, 1940-41 to 1974-75, including annual distribution by regions and growth rates

YEAR	ATLANTIC		QUEBEC		ONTARIO		WESTERN		CANADA	
	ENROLMENT	%	ENROLMENT	%	ENROLMENT	%	ENROLMENT	%	ENROLMENT	
1940-41	80	4.6	604	34.4	698	39.8	373	21.3	1,755	
1945-56	42	2.6	889	55.3	414	25.7	264	16.4	1,609	
1950-51	138	3.2	1,336	31.3	1,793	42.0	1,003	23.5	4,270	
1955-56	119	3.8	1,053	33.7	1,452	46.4	503	16.1	3,127	
1960-61	370	4.1	1,981	30.4	2,599	39.9	1,668	25.6	6,518	
1961-62	346	4.5	2,296	29.9	3,249	42.4	1,777	23.2	7,668	
1962-63	457	5.4	2,813	33.3	3,328	39.4	1,838	21.8	8,436	
1963-64	515	4.6	3,868	34.7	4,201	37.7	2,549	22.9	11,133	
1964-65	756	5.5	4,641	33.6	5,424	39.3	2,975	21.6	13,797	
1965-66	905	5.3	5,810	33.8	6,859	39.9	3,622	21.1	17,196	
1966-67	1,030	5.2	6,500	33.0	7,727	39.2	4,462	22.6	19,719	
1967-68	1,373	5.6	7,662	31.7	9,782	40.4	5,370	22.2	24,187	
1968-69	1,599	6.1	5,977	22.9	11,498	43.9	7,046	27.0	26,120	
1969-70	1,883	6.2	6,555	21.7	13,458	44.9	8,335	27.6	30,231	
1970-71	1,555	5.0	6,675	21.7	13,869	45.0	8,436	27.4	30,815	
1971-72	1,611*	5.2	7,262	23.4	13,632	43.9	8,529	27.5	31,034*	
1972-73	1,869	6.4	6,920	23.6	12,641	43.1	7,897	26.9	29,327	
1973-74	1,753	5.9	7,163	24.2	13,072	44.3	7,552	25.6	29,540	
1974-75	1,997	6.4	8,235	26.3	13,794	44.1	7,270	23.2	31,296	

GROWTH RATES
(Constant Annual %)

	Atlantic		Quebec		Ontario		Western		Canada	
	Atlantic		Quebec		Ontario		Western		Canada	
1940-41 to 1950-51	5.6		8.3		9.9		10.4		8.4	
1950-51 to 1960-61	6.9		4.0		3.8		5.2		4.3	
1960-61 to 1970-71	19.1		12.9		18.2		17.6		16.8	
1970-71 to 1972-73	9.6		1.8		-4.5		-3.2		-2.4	
1940-41 to 1970-71	11.1		8.5		10.1		10.8		10.0	
1970-71 to 1974-75	6.4		5.4		-0.1		-3.6		0.4	

* Excludes Newfoundland

SOURCE: Statistics Canada, Fall Enrolment in Universities and Colleges, Cat. no. 81-204 (Ottawa: Information Canada), and unpublished data.

Table no III,10.

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FULL-TIME UNDERGRADUATE ENROLMENT* AT CANADIAN UNIVERSITIES,
BY INSTITUTION (SELECTED), 1970-71 to 1974-75

UNIVERSITY	1970-71	1971-72	1972-73	1973-74	1974-75
1 Alberta	15,584	15,890	15,153	15,995	17,011
2 Bishop's	1,140	516	612	715	712
3 British Columbia	17,280	16,185	15,111	16,186	16,107
4 Brock	2,138	2,336	2,339	2,195	2,236
5 Calgary	8,126	8,344	7,892	8,396	8,637
6 Carleton	7,457	7,743	7,560	7,559	7,675
7 Concordia	9,340	5,264	5,549	7,008	8,174
8 Dalhousie	4,574	5,150	5,233	5,674	5,807
9 Guelph	5,455	6,535	7,019	7,800	8,453
10 Laurentian	2,092	2,042	1,925	1,871	2,116
11 Laval	9,222	8,795	8,740	10,007	11,634
12 Manitoba	11,542	11,992	12,203	11,996	12,577
13 McGill	11,455	7,717	8,226	10,549	12,283
14 McMaster	6,398	7,023	7,006	7,141	7,828
15 Memorial	6,045	6,725	6,950	6,085	5,483
16 Moncton	2,999	3,191	3,002	2,968	2,940
17 Montréal	11,076	12,007	12,556	12,922	12,808
18 New Brunswick	4,643	4,678	4,303	4,644	4,815
19 Nova Scotia Technical College	526	433	393	401	442
20 Ottawa	6,572	6,857	7,065	7,917	8,605
21 Québec	6,549	7,802	8,308	8,493	9,476
22 Queen's	6,856	7,493	7,777	8,177	8,557
23 Regina	3,567	3,065	2,678	2,830	2,865
24 Saskatchewan	8,660	9,373	8,142	8,270	8,130
25 Sherbrooke	3,403	3,544	3,733	3,601	3,411
26 Simon Fraser	3,658	3,364	3,323	3,377	4,591
27 St. Francis Xavier	2,973	2,940	2,783	2,101	2,125
28 St. Mary's	2,280	2,531	2,554	2,380	2,308
29 Toronto	20,499	21,244	22,192	23,533	25,753
30 Trent	1,643	1,764	1,895	1,822	1,993
31 Victoria	4,723	4,623	4,163	4,414	4,971
32 Waterloo	10,485	11,115	11,473	11,700	12,158
33 Western Ontario	10,480	10,949	11,143	11,935	13,516
34 Wilfrid Laurier	2,638	2,574	2,356	2,293	2,427
35 Windsor	5,474	5,351	4,904	5,243	5,509
36 York	9,002	10,076	9,853	9,017	10,343
SUB-TOTAL: 1-36	246,554	247,231	246,114	257,215	274,476
TOTAL: ALL UNIVERSITIES	277,807	270,572	267,243	288,732	305,231
1-36 as % of all universities	88.8%	91.4%	92.1%	89.1%	89.9%

*Enrolment leading to undergraduate degrees, diplomas and certificates is included under the heading undergraduate enrolment.

SOURCES: 1970-71 & 1971-72: Dominion Bureau of Statistics, Fall Enrolment in Universities and Colleges (81-204) Ottawa.

1972-73: Statistics Canada and Association of Universities and Colleges of Canada, Universities and Colleges of Canada 1974 (81-230) Table 1, Ottawa.

1973-74, 1974-75: Statistics Canada, unpublished information.

FULL-TIME GRADUATE ENROLMENT AT CANADIAN UNIVERSITIES,
BY INSTITUTION, 1970-71 TO 1975-76

UNIVERSITY	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76
1 Alberta	2,141	1,969	1,897	1,751	1,717	1,799
2 Bishop's	17	6	6	7	4	2
3 British Columbia	2,153	2,142	2,185	2,111	2,040	1,990
4 Brock	-	18	18	47	58	78
5 Calgary	850	810	776	743	787	871
6 Carleton	600	644	576	628	706	925
7 Concordia	200	216	269	342	439	616
8 Dalhousie	760	729	691	743	746	814
9 Guelph	559	510	476	520	580	630
10 Laurentian	16	22	25	30	35	46
11 Laval	1,106	1,163	830	891	1,379	1,480
12 Manitoba	1,274	1,098	1,060	1,064	1,120	1,210
13 McGill	2,937	2,456	2,457	2,470	1,786	1,887
14 McMaster	1,179	1,167	1,147	1,185	1,280	1,272
15 Memorial	316	374	346	436	451	429
16 Moncton	130	146	149	150	140	128
17 Montréal	1,964	1,922	1,982	1,930	1,930	2,245
18 New Brunswick	437	410	397	341	349	367
19 Nova Scotia Technical College	41	57	50	25	27	28
20 Ottawa	1,226	1,146	1,051	1,040	995	1,042
21 Québec	-	156	166	508	548	799
22 Queen's	958	942	903	823	1,029	1,096
23 Regina	150	120	93	101	99	100
24 Saskatchewan	552	525	465	415	408	479
25 Sherbrooke	716	915	708	955	829	831
26 Simon Fraser	705	747	789	831	701	724
27 St. Francis Xavier	34	19	31	19	6	34
28 St. Mary's	12	13	8	16	22	51
29 Toronto	4,473	4,414	4,078	4,190	4,338	4,403
30 Trent	10	12	7	7	12	15
31 Victoria	178	176	205	183	208	239
32 Waterloo	1,269	1,124	1,136	1,186	1,214	1,367
33 Western Ontario	1,594	1,508	1,398	1,498	1,590	1,631
34 Wilfrid Laurier	26	201	200	108	108	202
35 Windsor	480	406	406	404	404	469
36 York	785	855	909	977	1,073	1,176
SUB-TOTAL: 1-36	29,848	29,138	27,890	28,675	29,158	31,475
TOTAL*	30,815	31,408	29,327	29,540	31,296	NA

* As per Statistics Canada for all universities.

SOURCE: Canadian Association of Graduate Schools, Statistical Report.
Prior to 1975-76 for Moncton and Sherbrooke, Statistics Canada.

FULL-TIME UNDERGRADUATE ENROLMENT AT CANADIAN UNIVERSITIES (SELECTED),
1970-71 to 1974-75, INDEXES

UNIVERSITY	1970-71	1971-72	1972-73	1973-74	1974-75
1 Alberta	100.0	102.0	97.2	102.6	109.2
2 Bishop's	100.0	45.3	53.7	62.7	62.5
3 British Columbia	100.0	93.7	87.4	93.7	93.2
4 Brock	100.0	109.3	109.4	102.7	104.6
5 Calgary	100.0	102.7	97.1	103.3	106.3
6 Carleton	100.0	103.8	101.4	101.4	102.9
7 Concordia	100.0	56.4	59.4	75.0	87.5
8 Dalhousie	100.0	112.6	114.4	124.0	127.0
9 Guelph	100.0	119.8	128.7	143.0	155.0
10 Laurentian	100.0	97.6	92.0	89.4	101.1
11 Laval	100.0	95.4	94.8	108.5	126.2
12 Manitoba	100.0	103.9	105.7	103.9	109.0
13 McGill	100.0	67.4	71.8	92.1	107.2
14 McMaster	100.0	109.8	109.5	111.6	122.4
15 Memorial	100.0	111.2	115.0	100.7	90.7
16 Moncton	100.0	106.4	100.1	99.0	98.0
17 Montréal	100.0	108.4	113.4	116.7	115.6
18 New Brunswick	100.0	100.8	92.7	100.0	103.7
19 Nova Scotial Technical College	100.0	82.3	74.7	76.2	84.0
20 Ottawa	100.0	104.3	107.5	120.5	130.9
21 Québec	100.0	119.1	126.9	129.7	144.7
22 Queen's	100.0	109.3	113.4	119.3	124.8
23 Regina	100.0	85.9	75.1	79.3	80.3
24 Saskatchewan	100.0	108.2	94.0	95.5	93.9
25 Sherbrooke	100.0	104.1	109.7	105.8	100.2
26 Simon Fraser	100.0	92.0	90.8	92.3	125.5
27 St. Francis Xavier	100.0	98.9	93.6	70.7	71.5
28 St. Mary's	100.0	111.0	112.0	104.4	101.2
29 Toronto	100.0	103.6	108.3	114.8	125.6
30 Trent	100.0	107.4	115.3	110.9	121.3
31 Victoria	100.0	97.9	88.1	93.5	105.3
32 Waterloo	100.0	106.0	109.4	111.6	116.0
33 Western Ontario	100.0	104.5	106.3	113.9	129.0
34 Sir Wilfrid Laurier	100.0	97.6	89.3	86.9	92.0
35 Windsor	100.0	97.8	89.6	95.8	100.6
36 York	100.0	111.9	109.5	100.2	114.9
SUB-TOTAL	100.0	100.3	99.8	104.3	111.3
TOTAL *	100.0	97.4	96.2	103.9	109.9

* As per Statistics Canada for all universities

SOURCE: See table III,10.

FULL-TIME GRADUATE ENROLMENT AT CANADIAN UNIVERSITIES, INDEXES
1970-71 to 1975-76

UNIVERSITY	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76
1 Alberta	100.0	92.0	88.6	81.8	80.2	84.0
2 Bishop's	100.0	35.3	35.3	41.2	23.5	11.8
3 British Columbia	100.0	99.5	101.5	98.0	94.8	92.4
4 Brock	100.0	-	-	-	-	-
5 Calgary	100.0	95.3	91.3	87.4	92.6	102.5
6 Carleton	100.0	107.3	96.0	104.7	117.7	154.2
7 Concordia	100.0	108.0	134.5	171.0	219.5	308.0
8 Dalhousie	100.0	95.9	90.9	97.8	98.2	107.1
9 Guelph	100.0	91.2	85.2	93.0	103.8	112.7
10 Laurentian	100.0	137.5	156.3	187.5	218.8	287.5
11 Laval	100.0	105.2	75.0	80.6	124.9	133.8
12 Manitoba	100.0	86.2	83.2	83.5	87.9	95.0
13 McGill	100.0	83.6	83.7	84.1	60.8	64.2
14 McMaster	100.0	99.0	97.3	100.5	108.6	107.9
15 Memorial	100.0	118.4	109.5	138.0	142.7	135.8
16 Moncton	100.0	112.3	114.6	115.4	107.7	98.5
17 Montréal	100.0	97.9	100.9	98.3	98.3	114.3
18 New Brunswick	100.0	93.8	90.8	78.0	79.9	84.0
19 Nova Scotia Technical College	100.0	139.0	122.0	61.0	65.9	68.3
20 Ottawa	100.0	93.5	85.7	84.8	81.2	85.0
21 Québec	-	-	-	-	-	-
22 Queen's	100.0	98.3	94.3	85.9	107.4	114.4
23 Regina	100.0	80.0	62.0	67.3	66.0	66.7
24 Saskatchewan	100.0	95.1	84.2	75.2	73.9	86.8
25 Sherbrooke	100.0	127.8	98.9	133.4	115.8	116.1
26 Simon Fraser	100.0	106.0	111.9	117.9	99.4	102.7
27 St. Francis Xavier	100.0	55.9	91.2	55.9	17.6	100.0
28 St. Mary's	100.0	108.3	66.7	133.3	183.3	425.0
29 Toronto	100.0	98.7	91.2	93.7	97.0	98.4
30 Trent	100.0	120.0	70.0	70.0	120.0	150.0
31 Victoria	100.0	98.9	115.2	102.8	116.9	134.3
32 Waterloo	100.0	88.6	89.5	93.5	95.7	107.7
33 Western Ontario	100.0	94.6	87.7	94.0	99.7	102.3
34 Wilfrid Laurier	100.0	773.1	769.2	415.4	415.4	776.9
35 Windsor	100.0	84.6	84.6	84.2	84.2	97.7
36 York	100.0	108.9	115.8	124.5	136.7	149.8
SUB-TOTAL: 1 - 36	100.0	97.6	93.4	96.1	97.7	105.5
TOTAL*	100.0	101.9	95.2	95.9	101.6	

*As per Statistics Canada for all universities.

SOURCE: Canadian Association of Graduate Schools, Statistical Report.
Prior to 1975-76 for Moncton and Sherbrooke, Statistics Canada.

COMPARISON OF FULL-TIME GRADUATE ENROLMENT AT CANADIAN UNIVERSITIES,
1971-72 & 1975-76

UNIVERSITY *	1971-72		1975-76	
	FULL-TIME ENROLMENT	RANK	FULL-TIME ENROLMENT	RANK
1 Toronto	4,414	1	4,403	1
2 McGill	2,497	2	1,897	4
3 British Columbia	2,142	3	1,990	3
4 Alberta	1,969	4	1,799	5
5 Montréal	1,922	5	2,245	2
6 Western Ontario	1,508	6	1,631	6
7 McMaster	1,167	7	1,272	9
8 Laval	1,163	8	1,480	7
9 Ottawa	1,146	9	1,042	13
10 Waterloo	1,124	10	1,367	8
11 Manitoba	1,098	11	1,210	10
12 Queen's	942	12	1,096	12
13 York	855	13	1,176	11
14 Calgary	810	14	871	15
15 Simon Fraser	747	15	724	13
16 Dalhousie	729	16	814	16
17 Carleton	644	17	925	14
18 Saskatchewan	525	18	479	21
19 Guelph	510	19	630	19
20 New Brunswick	410	20	367	24
21 Windsor	406	21	469	22
22 Memorial	374	22	429	23
23 Concordia	216	23	616	20
24 Sir Wilfrid Laurier	201	24	202	26
25 Victoria	176	25	239	25
26 Québec	156	26	799	17

*Excludes Sherbrooke and Moncton

SOURCE: Canadian Association of Graduate Schools, Statistical Report.

RATIO OF UNDERGRADUATE/GRADUATE ENROLMENT BY UNIVERSITY

UNIVERSITY	1970-71	1971-72	1972-73	1973-74	1974-75
1 Alberta	7.28	8.07	7.99	9.13	9.91
2 Bishop's	67.06	86.00	102.00	102.14	178.00
3 British Columbia	8.03	7.56	6.92	7.67	7.90
4 Brock	-	129.78	129.94	46.70	38.55
5 Calgary	9.56	10.30	10.17	11.30	10.98
6 Carleton	12.43	12.02	13.13	12.04	10.87
7 Concordia	46.70	24.37	20.63	20.49	18.62
8 Dalhousie	6.02	7.06	7.57	7.64	7.78
9 Guelph	9.76	12.81	14.75	15.00	14.57
10 Laurentian	130.75	92.82	77.00	62.37	60.46
11 Laval	8.34	7.56	10.53	11.23	8.44
12 Manitoba	9.06	10.92	11.51	11.27	11.23
13 McGill	3.90	3.14	3.35	4.27	6.88
14 McMaster	5.43	6.02	6.11	6.03	6.12
15 Memorial	19.13	17.98	20.09	13.96	12.16
16 Moncton	23.07	21.86	20.15	19.79	21.00
17 Montréal	5.64	6.25	6.34	6.70	6.64
18 New Brunswick	10.62	11.41	10.84	13.62	13.80
19 Nova Scotia Technical College	12.83	7.60	7.86	16.04	16.37
20 Ottawa	5.36	5.98	6.72	7.61	8.65
21 Québec	-	50.01	50.05	16.72	17.29
22 Queen's	7.16	7.95	8.61	9.94	8.32
23 Regina	23.78	25.54	28.80	28.02	28.94
24 Saskatchewan	15.69	17.85	17.51	19.93	19.93
25 Sherbrooke	4.75	3.87	5.27	3.77	4.11
26 Simon Fraser	5.19	4.50	4.21	4.06	6.55
27 St. Francis Xavier	87.44	154.74	89.77	110.58	354.17
28 St. Mary's	190.00	194.69	319.25	148.75	104.91
29 Toronto	4.58	4.81	5.44	5.62	5.94
30 Trent	164.30	147.00	270.71	260.29	166.08
31 Victoria	26.53	26.27	20.31	24.12	23.90
32 Waterloo	8.26	9.89	10.10	9.87	10.01
33 Western Ontario	6.57	7.26	7.97	7.97	8.50
34 Sir Wilfrid Laurier	101.46	12.81	11.78	21.23	22.47
35 Windsor	11.40	13.18	12.08	12.98	13.64
36 York	11.47	11.78	10.84	9.23	9.64
SUB-TOTAL: 1-36	8.26	8.48	8.82	8.58	9.41
TOTAL *	9.02	8.62	9.11	9.77	9.75

* As per Statistics Canada for all universities.
 SOURCE: See tables III,10 and III,10.1.

COMPARISON OF FULL-TIME GRADUATE ENROLMENT AND FULL-TIME UNIVERSITY FACULTY, CANADA, BY REGION,
BY FIELD & SELECTED DISCIPLINES, 1972-73*

FIELD & DISCIPLINE	CANADA			ATLANTIC REGION			QUEBEC			ONTARIO			WESTERN REGION		
	FULL-TIME GRADUATE ENROLMENT	FULL- TIME FACULTY	STUDENT: FACULTY	FULL- TIME GRADUATE ENROLMENT	FULL- TIME FACULTY	STUDENT: FACULTY	FULL- TIME GRADUATE ENROLMENT	FULL- TIME FACULTY	STUDENT: FACULTY	FULL- TIME GRADUATE ENROLMENT	FULL- TIME FACULTY	STUDENT: FACULTY	FULL- TIME GRADUATE ENROLMENT	FULL- TIME FACULTY	STUDENT: FACULTY
History	960	1,017	0.9	67	141	0.5	327	192	1.7	442	429	1.0	213	255	0.8
English language & literature	1,316	1,407	0.9	144	219	0.7	151	141	1.1	684	603	1.1	337	444	0.8
French language & literature	588	816	0.7	29	129	0.2	324	177	1.8	179	372	0.5	56	441	0.4
Philosophy	621	669	0.9	28	84	0.3	170	108	1.6	331	324	1.0	92	150	0.6
SUB-TOTAL: HUMANITIES	5,749	5,708	1.0	378	752	0.5	1,455	981	1.5	2,812	2,607	1.1	1,104	1,356	0.8
Administrative studies	2,281	936	2.4	68	132	0.5	660	270	2.4	1,025	276	3.7	528	255	2.1
Communications studies	650	90	7.2	62	6	10.3	206	15	13.7	274	54	5.1	108	18	6.0
Economics	1,049	840	1.2	56	93	0.6	209	159	1.3	519	339	1.5	265	249	1.1
Education	2,547	2,568	1.0	192	279	0.7	640	531	1.2	680	795	0.9	1,035	960	1.1
Law	151	480	0.3	1	42	0.02	100	153	0.7	38	192	0.2	13	53	0.1
Political science	743	681	1.1	47	81	0.6	224	81	2.8	361	378	1.0	111	133	0.8
Psychology	1,552	1,134	1.4	133	159	0.8	434	216	2.0	651	510	1.3	334	249	1.3
Social work	797	264	3.0	74	27	2.7	146	60	2.4	356	93	3.8	198	61	2.4
Sociology	666	756	0.9	40	102	0.4	189	129	1.5	294	354	0.8	143	171	0.8
SUB-TOTAL: SOCIAL SCIENCES	12,360	9,033	1.4	707	987	0.7	3,215	1,908	1.7	5,111	3,555	1.4	3,327	2,563	1.3
SUB-TOTAL: HUMAN SCIENCES	18,109	14,741	1.2	1,085	1,749	0.6	4,470	2,889	1.5	7,923	6,162	1.3	4,431	3,939	1.1
Fine arts	335	993	0.3	0	111		111	210	0.5	118	330	0.4	106	342	0.3
Agriculture & biol. sciences	2,089	1,971	1.1	156	168	0.9	359	450	0.8	594	663	0.9	980	637	1.4
Engineering	3,175	2,100	1.5	219	213	1.0	733	561	1.3	1,465	834	1.8	758	452	1.5
Health sciences	1,095	3,492	0.3	27	342	0.1	330	831	0.4	442	1,380	0.3	296	557	0.3
Mathematics & phys. sciences	4,105	3,960	1.0	300	504	0.6	717	891	0.8	1,790	1,479	1.2	1,298	1,056	1.2
SUB-TOTAL: NATURAL SCIENCES	10,464	11,523	0.9	702	1,209	0.6	2,139	2,733	0.8	4,291	4,356	1.0	3,332	3,222	1.0
TOTAL	29,327	27,783	1.1	1,869	3,036	0.6	6,920	6,051	1.1	12,641	11,037	1.1	7,897	7,559	1.0

*Disciplines within each field or sub-field will not necessarily add up; the residual should be placed in "other" category/.

SOURCE: Data on graduate enrolment from: Statistics Canada Fall Enrolment in Universities & Colleges and on faculty from: Statistics Canada and Association of Universities and Colleges of Canada, Women in Canadian Universities, A Statistical Compendium, Ottawa, 1975.

Total number of graduate degrees (Masters & Doctoral) awarded by Canadian universities
by field and discipline of study 1961-62 to 1973-74

DISCIPLINE/ FIELD OF STUDY	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69*	1969-70	1970-71	1971-72	1972-73	1973-74
Archaeology	4	0	0	0	0	0	6	2	1	4	2	11	16
Classics	20	13	43	59	87	59	49	47	50	59	50	46	31
History	71	91	128	154	239	260	351	218	311	314	370	342	310
English language & literature	74	93	133	142	178	268	306	365	480	485	529	463-	413
French language & literature	72	82	64	76	129	190	229	170	225	209	258	202	186
Other modern languages													
4 literature	36	33	55	95	51	58	91	123	184	176	159	161	229
Linguistics	13	4	7	13	4	12	22	22	42	58	54	62	42
Philosophy	120	120	120	132	163	138	138	153	178	171	177	207	156
Religious studies	48	62	78	116	239	237	297	271	257	399	488	532	380
Others	46	81	69	47	90	117	188	14	20	16	29	13	39
SUB-TOTAL: HUMANITIES	504	579	697	879	1,180	1,339	1,677	1,384	1,784	1,891	2,116	2,039	1,802
Administrative studies	374	437	391	532	661	787	854	994	972	1,096	1,185	1,283	1,370
Anthropology	2	13	15	25	24	28	42	40	59	62	85	84	88
Communication studies	2	3	3	6	20	56	59	117	138	351	404	533	516
Economics	75	88	93	118	144	183	227	235	283	348	339	440	370
Education	593	663	602	661	1,057	1,297	1,336	1,014	1,323	1,491	1,830	2,074	2,120
Geography	32	31	42	79	70	119	142	116	127	176	181	189	179
Inter-disciplinary studies	59	79	79	56	99	117	125	151	144	175	212	240	293
Law	7	15	12	14	7	74	52	39	42	48	38	40	52
Political science	25	26	26	59	64	80	90	99	166	222	254	276	293
Psychology	139	136	164	205	241	279	399	471	436	506	548	538	548
Social work	174	171	258	285	183	261	309	414	519	510	523	435	452
Sociology	22	19	22	32	51	74	172	175	179	204	231	273	247
Others	0	3	21	7	0	0	0	4	2	0	2	2	4
SUB-TOTAL:													
SOCIAL SCIENCES	1,504	1,634	1,738	2,074	2,621	3,355	3,807	3,869	4,390	5,196	5,768	6,407	6,532
SUB-TOTAL: HUMANITIES & SOCIAL SCIENCES	2,008	2,803	2,435	2,903	3,796	4,694	5,484	5,253	6,138	7,087	7,884	8,446	8,334
Fine Arts	15	15	39	29	19	52	74	111	72	92	103	100	124
Agric. & biol. sc.	233	287	221	396	468	470	539	549	726	828	784	723	698
Eng. & Applied science	308	336	433	505	624	671	861	1,121	1,174	1,400	1,287	1,310	1,229
Health Prof. & Occ.	144	161	173	201	225	273	330	294	385	309	443	498	415
Math. & Phys. Sc.	426	505	570	631	795	869	1,031	1,050	1,341	1,477	1,481	1,482	1,292
SUB-TOTAL: NAT. SC.	1,111	1,289	1,497	1,733	2,112	2,283	2,761	3,014	3,626	4,084	3,995	4,013	3,634
TOTAL	3,134	3,573	3,971	4,635	5,938	7,035	8,319	8,378	9,836	11,263	11,982	12,559	12,092

SOURCE: Compiled from data derived from Statistics Canada, Degrees, Diplomas, Certificates Awarded by Degree-Granting Institutions (81-211), Information Canada, Ottawa and unpublished data.

*Adjacent years averaged to obtain estimate for social work.

Percentage distribution of number of graduate degrees (Masters & Doctoral) awarded by Canadian universities,
by field and discipline of study, 1961-62 to 1973-74

FIELD AND DISCIPLINE OF STUDY	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74
Archaeology	0.1	--	--	--	--	--	0.1	-0.1	--	--	--	0.1	0.1
Classics	0.6	0.4	1.1	1.3	1.5	0.8	0.6	0.6	0.1	0.5	0.4	0.4	0.3
History	2.3	2.5	3.2	3.3	4.0	3.7	4.2	2.6	3.2	2.8	3.1	2.7	2.0
English lang. & lit.	2.4	2.5	3.3	3.0	3.0	3.7	4.4	4.4	4.9	4.3	4.4	3.7	3.4
French lang. & lit.	2.3	2.3	1.6	1.6	2.2	2.7	2.8	2.0	2.3	1.9	2.2	1.6	1.5
Other mod. lang. & lit.	1.1	0.9	1.4	2.0	0.9	0.8	1.1	1.5	1.9	1.6	1.3	1.3	1.9
Linguistics	0.4	0.9	0.2	0.3	0.1	0.2	0.3	0.3	0.4	0.5	0.5	0.5	0.3
Philosophy	3.8	3.4	3.0	2.8	2.7	2.0	1.7	1.8	1.8	1.5	1.5	1.6	1.5
Religious studies	1.5	1.7	2.0	2.5	4.0	3.4	3.6	3.2	2.6	3.5	4.1	4.2	3.1
Others	1.5	2.3	1.7	0.9	1.5	1.7	2.3	0.2	0.2	0.1	0.2	0.1	0.3
SUB-TOTAL HUMANITIES	16.1	16.3	17.6	17.8	19.9	19.0	20.2	16.5	18.1	16.8	17.7	16.2	14.9
Administrative studies	11.9	12.2	9.8	11.4	11.1	11.2	10.3	11.9	9.9	9.7	9.9	10.2	11.5
Anthropology	0.1	0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.7
Communication studies	0.1	0.1	0.1	0.1	0.3	0.8	0.7	1.4	1.4	3.1	3.4	4.2	4.3
Economics	2.4	2.5	2.3	2.5	2.4	2.6	2.7	2.8	2.9	3.1	2.8	3.5	3.1
Education	18.9	18.6	15.2	14.2	17.8	18.4	16.1	12.1	13.5	13.2	15.3	16.5	17.5
Geography	1.0	0.9	1.1	1.7	1.2	1.7	1.7	1.4	1.3	1.6	1.5	1.5	1.5
Inter-disciplinary st.	1.9	2.2	2.0	1.2	1.7	1.7	1.5	1.8	1.5	1.6	1.8	1.9	2.4
Law	0.2	0.4	0.3	0.3	0.1	1.1	0.6	0.5	0.4	0.4	0.3	0.3	0.4
Political science	0.8	0.7	0.7	1.3	1.1	1.1	1.1	1.2	1.7	2.0	2.1	2.2	2.4
Psychology	4.4	3.8	4.1	4.4	4.1	4.0	4.8	5.6	4.4	4.5	4.0	4.3	4.5
Social work	5.6	4.8	6.5	6.1	3.1	3.7	3.7	4.9	5.3	4.5	4.4	3.5	3.7
Sociology	0.7	0.5	0.6	0.7	0.9	1.1	2.1	2.1	1.8	1.8	1.9	2.2	2.0
Others	--	0.1	0.5	--	--	--	--	0.1	--	--	--	0.02	0.03
SUB-TOTAL SOCIAL SC.	48.0	47.1	43.8	44.5	44.1	47.7	45.8	46.2	44.6	46.1	48.1	51.0	51.1
SUB-TOTAL: HUMANITIES & SOCIAL SCIENCES	64.1	63.4	61.3	62.2	63.9	66.7	65.9	62.7	62.4	62.9	65.8	67.3	65.9
Fine Arts	0.5	0.4	1.0	0.6	0.5	0.7	0.9	1.3	0.7	0.8	0.9	0.8	1.0
Agric. & biol. sc.	7.4	8.0	5.6	8.5	7.9	6.7	6.5	6.6	7.4	7.4	6.5	5.8	5.6
Eng. & applied sc.	9.8	9.4	10.9	10.8	10.5	9.5	10.3	13.4	11.9	12.4	10.7	10.4	10.2
Health prof. & occup.	4.6	4.5	4.4	4.3	3.8	3.9	4.0	3.5	2.7	2.7	3.7	4.0	3.4
Math. & phys. sc.	13.6	14.1	14.4	13.5	13.4	12.4	12.4	13.5	13.6	13.1	12.4	11.8	11.7
SUB-TOTAL NATURAL SC.	35.4	36.1	37.7	37.1	35.6	32.5	33.2	36.0	36.9	36.3	33.5	32.0	31.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Compiled from data derived from Statistics Canada, Degrees, Diplomas, Certificates Awarded by Degree-Granting Institutions (81-211), Information Canada, Ottawa, and unpublished data.

Total number of masters degrees awarded by Canadian universities, by field and discipline of study, 1961-62 - 1973-74

FIELD AND DISCIPLINE OF STUDY	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74
Archaeology	4	0	0	0	0	0	3	1	0	3	1	7	10
Classics	20	13	40	58	87	57	48	43	46	56	36	39	24
History	65	79	120	143	229	248	333	198	282	278	321	307	263
English lang. & lit.	65	84	125	126	165	251	277	340	430	436	481	399	347
French lang. & lit.	71	79	60	73	118	181	224	151	210	191	238	181	161
Other mod. lang. & lit.	32	29	49	90	46	55	86	118	162	148	142	138	187
Linguistics	12	4	5	12	3	10	22	19	38	53	50	54	36
Philosophy	107	108	112	115	138	115	124	136	156	137	146	164	106
Religious studies	41	54	70	102	221	218	282	251	245	385	465	497	355
Others	46	77	68	40	86	112	186	13	20	16	29	13	38
SUB-TOTAL: HUMANITIES	463	527	649	759	1,093	1,247	1,585	1,270	1,589	1,703	1,909	1,799	1,527
Administrative studies	374	437	391	531	661	784	853	993	971	1,092	1,179	1,273	1,360
Anthropology	2	13	15	25	24	26	39	39	54	56	81	74	73
Communication studies	2	3	3	6	20	56	59	117	138	351	404	533	515
Economics	70	82	86	108	130	173	208	215	269	324	318	401	331
Education	577	651	590	640	1,033	1,258	1,263	954	1,245	1,421	1,721	1,952	1,992
Geography	29	28	49	74	67	113	132	103	113	158	159	165	148
Inter-disciplinary st.	52	72	69	49	93	104	117	134	126	160	190	220	263
Law	7	14	11	13	7	69	51	39	39	33	28	35	48
Political science	24	24	24	59	61	80	85	96	159	213	238	256	274
Psychology	118	112	128	168	195	231	317	372	350	387	375	417	415
Social work	174	170	258	282	183	261	306	412	508	509	522	429	451
Sociology	21	19	22	32	50	73	167	170	177	192	216	250	216
Others	0	3	21	1	0	0	0	2	2	0	2	2	4
SUB-TOTAL: SOCIAL SC.	1,450	1,628	1,667	1,988	2,524	3,228	3,597	3,646	4,151	4,896	5,433	6,007	6,090
SUB-TOTAL: HUMANITIES & SOCIAL SCIENCES	1,913	2,755	2,316	2,747	3,617	4,475	5,182	4,916	5,740	6,599	7,342	7,806	7,617
Fine Arts	15	15	37	28	18	50	74	111	69	86	97	95	120
Agric. & biol. sc.	166	187	221	299	334	362	394	585	491	552	544	473	451
Eng. & applied sc.	236	307	383	453	531	555	738	947	986	1,175	1,026	1,011	928
Health prof. & occup.	120	131	143	157	184	218	263	229	290	277	292	320	262
Math. & phys. sc.	313	351	390	412	545	583	663	682	885	949	957	925	818
SUB-TOTAL: NATURAL SC.	885	976	1,137	1,321	1,594	1,713	2,058	2,243	2,652	2,953	2,819	2,729	2,459
TOTAL	2,813	3,152	3,490	4,096	5,235	6,249	7,314	7,270	8,461	9,638	10,258	10,630	10,196

SOURCE: Compiled from data derived from Statistics Canada, Degrees, Diplomas, Certificates Awarded by Degree-Granting Institutions (81-211), Information Canada, Ottawa, and unpublished data.

Total number of doctoral degrees awarded by Canadian universities, by field and discipline of study, 1961-62 - 1973-74

Table no III, 15

FIELD AND DISCIPLINE OF STUDY	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74
Archaeology	0	0	0	0	0	0	3	1	1	1	1	4	6
Classics	0	0	3	1	0	2	1	4	4	3	14	7	7
History	6	12	8	11	10	12	18	20	29	36	49	35	47
English lang. & lit.	9	9	8	16	13	17	29	25	50	49	64	64	66
French lang. & lit.	1	3	4	3	11	9	5	19	15	18	20	21	25
Other mod. lang. & lit.	4	4	6	5	5	3	5	5	22	28	17	23	42
Linguistics	1	0	2	1	1	2	0	2	4	5	4	8	6
Philosophy	13	12	8	17	25	23	14	17	22	34	31	43	50
Religious studies	7	8	8	14	18	19	15	20	12	14	23	35	25
Others	0	4	1	2	4	5	2	1	0	0	0	0	1
SUB-TOTAL: HUMANITIES	41	52	48	70	87	92	92	114	159	188	207	240	275
Administrative studies	0	0	0	1	0	3	1	1	1	4	6	10	10
Anthropology	0	0	0	0	0	2	3	1	5	6	4	10	15
Communication studies	0	0	0	0	0	0	0	0	0	0	0	0	1
Economics	5	6	7	10	14	10	19	20	14	24	21	39	39
Education	16	12	12	21	24	39	73	60	78	77	109	122	128
Geography	3	3	3	5	3	6	10	13	14	15	22	24	31
Inter-disciplinary st.	7	7	10	7	6	13	8	17	18	15	22	20	30
Law	0	1	1	1	0	5	1	0	3	15	10	5	4
Political science	1	2	2	0	3	0	5	3	7	9	16	20	19
Psychology	21	24	36	37	40	48	82	99	86	119	109	121	133
Social work	0	1	0	3	0	0	3	2	11	1	1	6	1
Sociology	1	0	0	0	1	1	5	5	2	12	15	23	31
Others	0	0	0	1	0	0	0	2	0	0	0	0	0
SUB-TOTAL: SOCIAL SC.	54	56	71	86	97	127	210	223	239	300	335	400	442
SUB-TOTAL: HUMANITIES & SOCIAL SCIENCES	95	108	119	156	184	219	302	337	398	488	542	640	717
Fine Arts	0	0	2	1	1	2	0	0	3	0	6	0	4
Agric. & biol. sc.	67	100	100	97	134	108	145	164	235	276	240	250	247
Eng. & applied sc.	22	29	50	52	93	116	123	174	186	225	261	299	301
Health prof. & occup.	24	30	30	44	41	55	67	65	95	102	151	178	153
Math. & phys. sc.	113	154	180	219	250	286	368	368	456	528	524	557	474
SUB-TOTAL: NATURAL SC.	226	313	360	412	518	565	703	771	974	1,131	1,176	1,284	1,175
TOTAL	321	421	481	569	703	786	1,005	1,108	1,375	1,625	1,724	1,929	1,890

SOURCE: Compiled from data derived from Statistics Canada, Degrees, Diplomas, Certificates Awarded by Degree-Granting Institutions (81-211), Information Canada, Ottawa, and unpublished data.

Annual percentage change in the output of doctoral degrees
awarded by Canadian universities, 1961-62 to 1973-74

YEAR	PER CENT
1961-62 to 1962-63	31.2
1962-63 to 1963-64	14.3
1963-64 to 1964-65	18.3
1964-65 to 1965-66	23.6
1965-66 to 1966-67	11.8
1966-67 to 1967-68	28.0
1967-68 to 1968-69	10.1
1968-69 to 1969-70	24.1
1969-70 to 1970-71	18.2
1970-71 to 1971-72	6.1
1971-72 to 1972-73	11.7
1972-73 to 1973-74	- 1.6

SOURCE: Based on data supplied by Statistics Canada,
Education Division.

MASTERS AND DOCTORAL DEGREES AWARDED BY CANADIAN UNIVERSITIES BY FIELD
AND DISCIPLINES; CONSTANT ANNUAL GROWTH RATES, 1961-62 to 1971-72

Discipline/Field of Study	Per Cent	
	Masters Degrees	Doctoral Degrees
Archeology	-12.9	N.A.
Classics	6.1	N.A.
History	17.3	23.0
English Language & Literature	22.0	18.6
French Language & Literature	12.9	35.0
Other Modern Languages & Literature	16.1	15.6
Linguistics	15.3	14.9
Philosophy	3.2	9.1
Religious Studies	27.0	12.6
Others	- 4.5	--
Sub-Total: Humanities	15.2	17.6
Administrative Studies	12.2	N.A.
Anthropology	45.0	N.A.
Communication Studies	70.0	--
Economics	16.3	15.4
Education	11.5	21.0
Geography	18.5	22.0
Inter-Disciplinary Studies	13.8	12.1
Law	14.9	N.A.
Political Science	26.0	32.0
Psychology	12.3	17.9
Social Work	11.6	N.A.
Sociology	26.0	31.0
Others	N.A.	---
Sub-Total: Social Sciences	14.1	20.0
Sub-Total: Human Sciences	14.4	19.0
Fine Arts	21.0	N.A.
Agriculture & Biological Sciences	12.6	13.9
Engineering & Applied Sciences	13.6	28.0
Health Professions & Occupations	9.3	20.0
Mathematics & Physical Sciences	11.8	16.6
Sub-Total: Natural Sciences	12.3	17.9
TOTAL	13.8	18.3

Source: Compiled from data derived from Statistics Canada, Degrees, Diplomas, Certificates Awarded by Degree-Granting Institutions (91-211) Information Canada, Ottawa.

RATIOS OF MASTER TO DOCTORAL DEGREES AWARDED BY CANADIAN UNIVERSITIES
IN 1961-62 AND 1971-72 BY DISCIPLINE/FIELD OF STUDY, CANADA

<u>Discipline/Field of Study</u>	<u>Ratio of Masters to Doctoral Degrees 1961-62</u>	<u>Ratio of Masters to Doctoral Degrees 1971-72</u>
Archeology	N.A.	1.0
Classics	N.A.	2.6
History	10.8	6.6
English Language & Literature	7.2	10.0
French Language & Literature	71.0	11.9
Other Modern Languages & Literature	8.0	8.4
Linguistics	12.0	12.5
Philosophy	8.2	4.7
Religious Studies	5.9	20.2
Others	N.A.	N.A.
Sub-Total: Humanities	113.	9.2
Administrative Studies	N.A.	196.5
Anthropology	N.A.	20.3
Communication Studies	N.A.	--
Economics	14.0	15.1
Education	36.1	15.8
Geography	9.7	7.2
Inter-Disciplinary Studies	7.4	8.6
Law	N.A.	2.8
Political Science	24.1	14.9
Psychology	5.6	3.4
Social Work	N.A.	522.0
Sociology	21.0	14.4
Others	N.A.	--
Sub-Total: Social Sciences	26.9	16.2
Sub-Total: Human Sciences	20.1	13.5
Fine Arts	N.A.	16.2
Agriculture & Biological Sciences	2.5	2.3
Engineering & Applied Sciences	13.0	3.9
Health Professions & Occupations	5.0	1.9
Mathematics & Physical Sciences	2.8	1.8
Sub-Total:	3.9	2.4
Others Not Specified	--	--
Total	8.8	6.0

SOURCE: Based on Data in Statistics Canada, Degrees, Diplomas, Certificates Awarded by Degree-Granting Institutions.

NUMBER AND PERCENTAGE DISTRIBUTION OF MASTERS DEGREES AWARDED AT CANADIAN UNIVERSITIES, BY REGION, AND BY FIELD OF STUDY, 1971-72.

Field of Study	REGION																	
	Atlantic				Quebec				Ontario				Western				Canada	
	Degrees Awarded	Distribution			Degrees Awarded	Distribution			Degrees Awarded	Distribution			Degrees Awarded	Distribution			By Field	By Region
		By Field	By Region	By Region		By Field	By Region	By Region		By Field	By Region	By Field		By Region	By Field	By Region		
Humanities	98	18.0	5.1	355	19.1	18.6	1,175	21.4	61.6	281	11.9	14.7	1,909	18.6	100.0			
Social Sciences	260	47.7	4.8	968	52.0	17.8	2,902	52.9	53.4	1,303	55.1	24.0	5,433	53.0	100.0			
Humanities & Social Sciences	358	65.7	4.9	1,323	71.1	18.0	4,077	74.3	55.5	1,584	67.0	21.6	7,342	71.6	100.0			
Fine Arts	0	0		22	1.2	22.7	44	.8	45.4	31	1.3	32.0	97	0.9	100.0			
Natural Sciences	187	34.3	6.6	516	27.7	18.3	1,367	24.9	48.5	749	31.7	26.6	2,819	27.5	100.0			
Total	545	100.0	5.3	1,861	100.0	18.1	5,488	100.0	53.5	2,364	100.0	23.0	10,258	100.0	100.0			

Source: Compiled from data derived from Statistics Canada, Degrees, Diplomas, Certificates Awarded by Degree-Granting Institutions, (81-211)
Information Canada, Ottawa.

NUMBER AND PERCENTAGE DISTRIBUTION OF MASTERS DEGREES AWARDED BY UNIVERSITIES IN THE WESTERN REGION, BY PROVINCE, AND BY FIELD OF STUDY, 1971-72

Field of Study	PROVINCE									
	Manitoba		Saskatchewan		Alberta		British Columbia		Western Region	
	Degrees Awarded	Distribution By Field Prov.	Degrees Awarded	Distribution By Field Prov.	Degrees Awarded	Distribution By Field Prov.	Degrees Awarded	Distribution By Field Prov.	Degrees Awarded	Distribution By Field Prov.
Humanities	46	9.4 16.4	51	18.9 18.1	86	10.3 30.6	98	11.9 34.9	281	11.9 100.0
Social Sciences	198	45.6 15.2	116	43.0 8.9	500	60.0 38.4	489	59.1 37.5	1,303	55.1 100.0
Humanities & Social Sciences	244	56.2 15.4	167	61.9 10.5	586	70.3 37.0	587	71.0 37.1	1,584	67.0 100.0
Fine Arts	0	0.0 0.0	0	0.0 0.0	18	2.2 58.1	13	1.6 41.9	31	1.3 100.0
Natural Sciences	490	43.8 25.4	103	38.1 13.8	229	27.5 30.6	227	27.4 30.3	749	31.7 100.0
Total	434	100.0 18.4	270	100.0 11.4	833	100.0 35.2	827	100.0 35.0	2,364	100.0 100.0

SOURCE: Compiled from data derived from Statistics Canada, Degrees, Diplomas, Certificates Awarded by Degree-Granting Institutions (81-211) Information Canada, Ottawa.

NUMBER AND PERCENTAGE DISTRIBUTION OF MASTERS DEGREES AWARDED BY UNIVERSITIES IN THE ATLANTIC REGION, BY PROVINCE,
AND BY FIELD OF STUDY, 1971-72

Field of Study	PROVINCE											
	Newfoundland			New Brunswick			Nova Scotia			Atlantic Region		
	Distribution		Degrees Awarded	Distribution		Degrees Awarded	Distribution		Degrees Awarded	Distribution		Degrees Awarded
	By Field	By Prov.		By Field	By Prov.		By Field	By Prov.		By Field	By Prov.	
Humanities	11	15.9	11.2	31	18.2	31.6	56	18.3	57.1	98	16.0	100.0
Social Sciences	29	42.0	11.2	74	43.5	28.5	157	51.3	60.4	260	47.7	100.0
Human Sciences	40	58.0	11.2	105	61.8	29.3	213	69.6	59.5	358	65.7	100.0
Fine Arts	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0	0.0	100.0
Natural Sciences	29	42.0	15.5	65	38.2	34.8	93	30.4	49.7	187	34.3	100.0
Total	69	100.0	12.7	170	100.0	31.2	306	100.0	56.1	545	100.0	100.0

SOURCE: Compiled from data derived from Statistics Canada, Degrees, Diplomas, Certificates Awarded by
Degree-Granting Institutions (81-211) Information Canada, Ottawa.

NUMBER AND PERCENTAGE DISTRIBUTION OF DOCTORAL DEGREES AWARDED AT CANADIAN UNIVERSITIES, BY REGION, AND BY FIELD OF STUDY, 1971-72

Field of Study	REGION													
	Atlantic			Quebec			Ontario			Western				
	Degrees Awarded	Distribution		Awarded	Distribution		Awarded	Distribution		Awarded	Distribution			
		By Field	By Region		By Field	By Region		By Field	By Region		By Field	By Region		
Statistics	6	8.8	2.9	47	15.8	22.7	122	14.3	58.9	32	6.3	207	12.0	100.0
Social Sciences	5	7.4	1.5	57	19.1	17.0	171	20.1	51.0	102	20.1	335	19.4	100.0
Human Sciences	11	16.2	2.0	104	34.9	19.2	293	34.4	54.1	134	26.4	542	31.4	100.0
Fine Arts	0	0.0	0.0	2	0.7	33.3	4	.5	66.7	0	0.0	6	0.3	100.0
Natural Sciences	57	83.8	4.8	192	64.4	16.3	554	65.1	47.1	373	73.6	1,176	68.2	100.0
Total	68	100.0	3.9	298	100.0	17.3	851	100.0	49.4	507	100.0	1,724	100.0	100.0

SOURCE: Compiled from data derived from Statistics Canada, Degrees, Diplomas, Certificates Awarded by Degree-Granting Institutions, (81-211), Information Canada, Ottawa.

RATIO OF MASTERS DEGREES TO DOCTORAL DEGREES AWARDED BY CANADIAN
UNIVERSITIES BY REGION, AND BY MAJOR FIELD OF STUDY 1971-72

Field of Study	REGION				
	Atlantic	Quebec	Ontario	Western	Canada
Human Sciences	32.5	12.7	13.9	11.8	13.5
Natural Sciences	3.3	2.7	2.5	2.0	2.4
Total	8.0	6.2	6.4	4.7	5.6

Source: Compiled from data derived from Statistics Canada, Degrees, Diplomas, Certificates Awarded by Degree-Granting Institutions (81-211) Information Canada, Ottawa.

Growth in masters and doctoral degree output from Canadian universities by major field of study, by region,
between 1968-69 and 1973-74 and percentage change

DEGREE LEVEL AND MAJOR FIELD OF STUDY	ATLANTIC			QUEBEC			ONTARIO			WESTERN			CANADA		
	1968-69	1973-74	Δ %	1968-69	1973-74	Δ %	1968-69	1973-74	Δ %	1968-69	1973-74	Δ %	1968-69	1973-74	Δ %
<u>Masters</u>															
Human sciences	175	448	156.0	1,291	1,640	27.0	2,307	4,129	79.0	831	1,400	68.5	4,504	7,617	69.1
Natural sciences	177	162	-8.5	493	590	19.7	1,006	1,097	9.0	567	610	7.6	2,243	2,459	9.6
Total*	352	610	73.3	1,827	2,257	23.5	3,268	5,281	61.6	1,411	2,048	45.1	6,858	10,196	48.7
<u>Doctoral</u>															
Human sciences	1	13	1200.0	80	120	50.0	170	388	128.2	86	196	188.2	337	717	112.8
Natural sciences	36	60	66.7	156	236	51.3	334	542	62.3	245	337	37.6	771	1,175	52.4
Total*	37	73	97.3	236	356	50.8	504	934	85.3	311	533	71.4	1,108	1,896	71.1

*Fields will not add up to total, because the field of fine arts is not included.

SOURCE: Compiled from data derived from Statistics Canada, Degrees, Diplomas, Certificates Awarded by Degree-Granting Institutions, (81-211), Information Canada, Ottawa, and unpublished data.

Number and Percentage Distribution
of Graduate Degree Holders, by
Field of Study, by Region of Residence
1972

Field of Study	Region									
	Atlantic		Quebec		Ontario		Western		Canada	
	No.	%	No.	%	No.	%	No.	%	No.	%
Humanities	1,690	7.3	7,040	30.4	10,035	43.3	4,390	18.9	23,170	100.0
Social Sciences	3,585	6.6	12,720	23.3	24,760	45.4	13,445	24.6	54,595	100.0
Humanities & Social Sciences	5,275	6.8	19,760	25.4	34,795	44.7	17,835	22.9	77,765	100.0
Fine Arts	95	5.2	400	22.1	790	43.6	540	29.8	1,810	100.0
Natural Sciences	2,555	6.1	8,730	21.0	19,080	45.8	11,240	27.0	41,615	100.0
Total	7,935	6.6	28,900	23.9	54,650	45.1	29,540	24.4	121,130	100.0

SOURCE: Statistics Canada and Ministry of State for Science and Technology,
Highly Qualified Manpower Post-Censal Survey 1973, Ottawa, 1973, Table 1.

Masters Degree Holders as a Percentage of all
Graduate Degree Holders, by Field of Study, by
Region of Residence in Canada, 1972

Field of Study	Region				
	Atlantic	Quebec	Ontario	Western	Canada
Humanities	81.7	81.7	78.2	77.6	79.5
Social Sciences	91.8	90.6	88.9	85.0	88.3
Humanities & Social Sciences	88.5	87.4	85.8	83.3	85.7
Fine Arts	94.7	84.5	88.6	84.6	89.0
Natural Sciences	62.0	63.0	60.6	60.8	61.2
Total	79.9	80.0	77.1	74.7	77.5

SOURCE: Statistics Canada and Ministry of State for Science and Technology, Highly Qualified Manpower Post-Censal Survey 1973, Ottawa, 1973, Table 1.

Table no III, 28

Number and Percentage Distribution of Masters and
Doctoral Degree Holders, by Field of Study, by
Region of Residence in Canada, 1972

Field of Study	DOCTORAL DEGREE HOLDERS						MASTERS DEGREE HOLDERS											
	Atlantic No.	Atlantic %	Quebec No.	Quebec %	Ontario No.	Ontario %	Western No.	Western %	Canada	Atlantic No.	Atlantic %	Quebec No.	Quebec %	Ontario No.	Ontario %	Western No.	Western %	Canada
Humanities	310	6.5	1,285	27.0	2,190	46.0	985	20.7	4,760	1,380	7.5	5,755	31.3	7,845	42.6	3,405	18.5	18,410
Social Sciences	295	4.6	1,195	18.7	2,745	43.1	2,015	31.6	6,375	3,290	6.8	11,525	23.9	22,015	45.7	11,430	23.7	48,220
Human Sciences	605	5.4	2,480	22.3	4,935	44.3	3,000	26.9	11,135	4,670	7.0	17,280	25.9	29,860	44.8	14,835	22.3	66,630
Fine Arts	5	2.5	45	22.5	90	45.0	75	37.5	200	90	5.6	355	22.0	700	43.5	465	28.9	1,610
Natural Sciences	970	6.0	3,230	20.0	7,510	46.5	4,405	27.3	16,140	1,585	6.2	5,500	21.5	11,570	45.4	6,835	26.8	25,475
Total	1,595	5.8	5,770	21.1	12,540	45.7	7,480	27.3	27,410	6,340	6.8	23,130	24.7	42,110	44.9	22,060	23.5	93,720

SOURCE: Statistics Canada and Ministry of State for Science and Technology, Highly Qualified Manpower Post-Censal Survey 1973, Ottawa, 1973, Table 1.

Number of Graduate Degree Holders in Canada,
by Field of Study by Place of
Origin of Last Highest Degree, Percentage Distribution*
1972

PLACE OF ORIGIN OF LAST HIGHEST DEGREE

Field of Study	Atlantic Region	Quebec	Ontario	Western Region	Canada	United States of America	United Kingdom	Other Foreign Countries	Sub-total Foreign Countries	Total
Humanities	1,075(4.6)	4,830(20.8)	7,315(31.6)	1,720(7.4)	14,940(64.5)	4,925(21.3)	770(3.3)	2,535(10.9)	8,230(35.5)	23,170
Social Sciences	1,895(3.5)	8,970(16.4)	19,350(35.4)	7,755(14.2)	37,970(69.5)	14,060(25.8)	1,145(2.1)	1,420(2.6)	16,625(30.5)	54,595
Human Sciences	2,970(3.8)	13,800(17.7)	26,665(34.3)	9,475(12.2)	52,910(68.0)	18,986(24.4)	1,915(2.5)	3,954(5.1)	24,855(32.0)	77,765
Fine Arts	0(0.0)	295(16.3)	240(13.3)	115(6.4)	650(35.9)	1,070(59.1)	35(1.9)	55(3.0)	1,160(64.1)	1,810
Natural Sciences	1,400(3.4)	6,255(15.0)	11,605(27.9)	6,615(15.9)	25,875(62.2)	9,245(22.2)	3,960(9.6)	2,535(6.1)	15,740(37.8)	41,615
Total	4,350(3.6)	20,365(16.8)	38,480(31.8)	16,235(13.4)	79,430(65.6)	29,295(24.2)	5,805(4.8)	6,600(5.4)	41,700(34.4)	121,130

SOURCE: Statistics Canada and Ministry of State for Science and Technology, Highly Qualified Manpower Post-Censal Survey 1973, Ottawa, 1973, Table 15.

* figures in brackets are percentages.

Field of Study Distribution of the
Number of Graduate Degree Holders in
Canada, by Place of Origin
of Last Highest Degree
1972 (%)

PLACE OF ORIGIN OF LAST HIGHEST DEGREE

Field of Study	Atlantic Region	Quebec	Ontario	Western Region	Canada	United States of America	United Kingdom	Other Foreign Countries	Sub-Total Foreign Countries	Total
Humanities	24.7	23.7	19.0	10.6	18.8	16.8	13.3	38.4	19.7	19.1
Social Sciences	43.6	44.0	50.3	47.8	47.8	48.0	19.7	21.5	39.9	45.1
Human Sciences	68.3	67.8	69.3	58.4	66.6	64.8	33.0	59.9	55.6	64.2
Fine Arts	0.0	1.4	0.6	0.7	.8	3.6	.6	.8	2.8	1.5
Natural Sciences	32.2	30.7	30.2	40.7	32.6	31.6	68.0	38.4	37.7	34.4
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

SOURCE: Statistics Canada and Ministry of State for Science and Technology, Highly Qualified Manpower Post-Censal Survey 1973, Ottawa, 1973, Table 15.

Table no III, 31

Number of Masters Degree Holders In Canada,
by Field of Study by Place of
Origin of Last Highest Degree, Percentage Distribution*
1972

PLACE OF ORIGIN OF LAST HIGHEST DEGREE

Field of Study	Atlantic Region	Quebec	Ontario	Western Region	Canada	United States of America	United Kingdom	Other Foreign Countries	Sub-Total Foreign Countries	Total
Humanities	1,040(5.6)	4,345(23.6)	6,365(34.6)	1,595(8.7)	13,345(72.5)	3,450(18.7)	260(1.4)	1,355(7.4)	5,065(27.5)	18,410
Social Sciences	1,865(3.9)	8,475(17.6)	18,290(37.9)	7,150(14.8)	35,780(74.2)	10,905(22.6)	675(1.4)	860(1.8)	12,440(25.8)	48,220
Human Sciences	2,905(4.4)	12,820(19.2)	24,655(37.0)	8,745(13.1)	49,125(73.7)	14,355(21.5)	935(1.4)	2,215(3.3)	17,505(26.3)	66,630
Fine Arts	0(0.0)	280(17.4)	220(17.4)	110(6.8)	610(37.9)	945(58.7)	10(0.6)	45(2.8)	1,000(62.1)	1,610
Natural Sciences	1,165(4.6)	3,985(15.6)	8,320(32.7)	4,610(18.1)	18,080(71.0)	5,250(20.6)	1,040(4.1)	1,105(4.3)	7,395(29.0)	25,475
Total	4,065(4.3)	17,065(18.2)	33,195(35.4)	13,500(14.4)	67,825(72.4)	20,565(21.9)	1,980(2.1)	3,350(3.6)	25,895(27.6)	93,720

SOURCE: Statistics Canada and Ministry of State for Science and Technology, Highly Qualified Manpower Post-Censal Survey 1973, Ottawa, 1973, Table 15.

* figures in brackets are percentages.

Field of Study Distribution
of the Number of Masters
Degree Holders in Canada, by
Place of Origin of Last
Highest Degree 1972

PLACE OF ORIGIN OF LAST HIGHEST DEGREE

Field of Study	Atlantic Region	Quebec	Ontario	Western Region	Canada	United States of America	United Kingdom	Other Foreign Countries	Sub-Total Foreign Countries	Total
Humanities	25.6	25.5	19.2	11.8	19.7	16.8	13.1	40.4	19.6	19.6
Social Sciences	45.9	49.7	55.1	53.0	52.8	53.0	34.1	25.7	48.0	51.5
Human Sciences	71.5	75.1	74.3	64.8	72.4	69.8	47.2	66.1	67.6	71.1
Fine Arts	0	1.6	.7	.8	.9	4.6	.5	1.3	3.9	1.7
Natural Sciences	28.7	23.4	25.1	34.1	26.7	25.5	52.5	33.0	25.6	27.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Statistics Canada and Ministry of State for Science and Technology, Highly Qualified Manpower Post-Censal Survey 1973, Ottawa, 1973, Table 15.

Table no III, 33

Number of Doctoral Degree Holders
in Canada,
by Field of Study, by Place of
Origin of Last Highest Degree, Percentage Distributions*
1972

PLACE OF ORIGIN OF LAST HIGHEST DEGREE

Field of Study	Atlantic Region	Quebec	Ontario	Western Region	Canada	United States of America	United Kingdom	Other Foreign Countries	Sub-Total Foreign Countries	Total
Humanities	35(0.7)	485(10.2)	950(20.0)	125(2.6)	1,595(33.5)	1,475(31.0)	510(10.7)	1,180(24.8)	3,155(66.5)	4,760
Social Sciences	30(0.5)	495(7.8)	1,060(16.6)	605(9.5)	2,190(34.4)	3,155(49.5)	470(7.4)	560(8.8)	4,315(55.6)	6,375
Human Sciences	65(0.6)	980(8.8)	2,010(18.1)	730(6.6)	3,785(34.0)	4,630(41.6)	980(8.8)	1,740(15.6)	7,350(66.0)	11,135
Fine Arts	0(0.0)	15(7.5)	20(10.0)	5(2.5)	40(20.0)	125(62.5)	25(12.5)	10(5.0)	165(80.0)	200
Natural Sciences	235(1.5)	2,270(14.1)	3,285(20.4)	2,005(12.4)	7,795(48.3)	3,995(24.8)	2,920(18.1)	1,430(8.9)	8,345(51.7)	16,140
Total	285(1.0)	3,300(12.0)	5,285(19.3)	2,735(10.0)	11,605(42.3)	8,730(31.8)	3,825(14.0)	3,250(11.9)	15,405(57.7)	27,440

SOURCE: Statistics Canada and Ministry of State for Science and Technology, Highly Qualified Manpower Post-Censal Survey 1973, Ottawa 1974, Table 15.

* figures in brackets are percentages.

Field of Study Distribution
of the Number of Doctoral
Degree Holders in Canada,
by Place of Origin of
Last Highest Degree, 1972

PLACE OF ORIGIN OF LAST HIGHEST DEGREE

Field of Study	Atlantic Region	Quebec	Ontario	Western Region	Canada	United States of America	United Kingdom	Other Foreign Countries	Sub-Total Foreign Countries	Total
Humanities	12.3	14.7	18.0	4.6	13.7	16.9	13.3	36.3	20.0	17.4
Social Sciences	10.5	15.0	20.1	22.1	18.9	36.1	12.3	17.2	26.5	23.3
Human Sciences	22.8	29.7	38.0	26.7	32.6	53.0	25.6	53.5	46.5	40.6
Fine Arts	0.0	.5	.4	.2	.3	1.4	.7	.3	1.0	.7
Natural Sciences	82.5	68.8	62.2	73.3	67.2	45.8	76.3	44.0	52.8	58.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Statistics Canada and Ministry of State for Science and Technology, Highly Qualified Manpower Post-Censal Survey 1973, Ottawa, 1973, Table 15.

COMPARISON OF UNIVERSITY DEGREE-HOLDERS (AS MEASURED BY HIGHEST DEGREE EARNED), BY LEVEL, WITH TOTAL POPULATION AGED 20 AND OVER CANADA AND THE PROVINCES, 1971

PROVINCE & REGION	MASTER'S DEGREE HOLDERS (1)	DOCTORAL DEGREE HOLDERS (2)	GRADUATE DEGREE HOLDERS (3)	UNDERGRADUATE & FIRST PROFESSIONAL DEGREE HOLDERS (4)	TOTAL DEGREE HOLDERS (5)	TOTAL POPULATION OVER 20 YEARS OF AGE (6)
Newfoundland	860	295	1,155	4,955	6,110	267,910
Prince Edward Island	305	70	375	1,770	2,145	64,675
Nova Scotia	3,285	805	4,090	15,570	19,660	467,990
New Brunswick	1,890	430	2,320	10,335	12,655	361,680
Atlantic Region	6,340	1,600	7,940	32,630	40,570	1,162,255
Quebec	23,130	5,770	28,900	116,925	145,825	3,620,935
Ontario	42,110	12,540	54,650	195,465	250,115	4,781,255
Manitoba	3,795	1,265	5,060	22,110	27,170	605,120
Saskatchewan	2,285	965	3,250	16,130	19,380	550,055
Alberta	6,855	2,530	9,385	41,440	50,825	952,475
British Columbia	9,130	2,725	11,855	54,650	66,505	1,373,530
Western Region	22,065	7,485	29,550	134,330	163,880	3,481,180
CANADA	93,720	27,410	121,130	480,040	601,170	13,073,070

*Excludes diplomas and certificates.

Table no III, 35

PROVINCE & REGION	(1) as % of (3)	(2) as % of (3)	(3) as % of (6)	(4) as % of (6)	(5) as % of (6)	(1) as % of (5)	(2) as % of (5)	(1) as % of (6)	(2) as % of (6)
Newfoundland	74.5	25.5	0.4	1.8	2.3	14.1	4.8	0.3	0.1
Prince Edward Island	81.3	18.7	0.6	2.7	3.3	14.2	3.3	0.5	0.1
Nova Scotia	80.3	19.7	0.9	3.3	4.2	16.7	4.1	0.7	0.2
New Brunswick	81.5	18.5	0.6	2.9	3.5	14.9	3.4	0.5	0.1
Atlantic Region	79.8	20.2	0.7	2.8	3.5	15.6	3.9	0.5	0.1
Quebec	80.0	20.0	0.8	3.2	4.0	15.9	4.0	0.6	0.2
Ontario	77.1	22.9	1.1	4.1	5.2	16.8	5.0	0.9	0.3
Manitoba	75.0	25.0	0.8	3.7	4.5	14.0	4.7	0.6	0.2
Saskatchewan	70.3	29.7	0.6	4.4	3.5	11.8	5.0	0.4	0.2
Alberta	73.0	27.0	1.0	4.9	5.3	13.5	5.0	0.7	0.3
British Columbia	77.0	23.0	0.9	4.0	4.8	13.7	4.1	0.7	0.2
Western Region	74.7	25.3	0.8	3.9	4.7	13.5	4.6	0.6	0.2
CANADA	77.4	22.6	0.9	3.7	4.6	15.6	4.6	0.7	0.2

PROVINCE & REGION	(1)	(2)	(3)	(4)	(5)	(6)
Newfoundland	.9	1.1	1.0	1.0	1.0	2.0
Prince Edward Island	0.3	0.3	0.3	0.4	0.4	0.5
Nova Scotia	3.5	2.9	3.4	3.2	3.3	3.6
New Brunswick	2.0	1.6	1.9	2.2	2.1	2.8
Atlantic Region	6.8	5.8	6.6	6.8	6.7	8.9
Quebec	24.7	21.1	23.9	24.4	24.3	27.7
Ontario	44.9	45.1	45.1	40.7	41.5	36.6
Manitoba	4.0	4.6	4.2	4.6	4.5	4.6
Saskatchewan	2.4	3.5	3.4	3.4	3.3	4.2
Alberta	9.7	9.9	11.4	11.4	11.1	10.5
British Columbia	23.5	27.3	24.4	28.0	27.3	26.6
Western Region	100.0	100.0	100.0	100.0	100.0	100.0
CANADA	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Statistics Canada and Ministry of State for Science & Technology, Highly Qualified Manpower Post Censal Survey 1973, Ottawa 1973; Statistics Canada, 1971 Census of Canada, Population Age Groups, Ottawa, 1973.

DISTRIBUTION OF CANADIAN BORN-DEGREE HOLDERS, BY HIGHEST DEGREE OBTAINED, BY DISCIPLINE AND FIELD OF STUDY,
BY MOTHER TONGUE, QUEBEC, 1971

DISCIPLINE & FIELD OF STUDY	MASTERS (1)		DOCTORATE (2)		TOTAL GRADUATES (3)		TOTAL GRADUATES (4)		TOTAL DEGREES (5)		TOTAL ALL LANGUAGES
	ANGLO- PHONE	FRANCO- PHONE	ANGLO- PHONE	FRANCO- PHONE	ANGLO- PHONE	FRANCO- PHONE	MASTER TOTAL	DOC- TORATE	ANGLO- PHONE	FRANCO- PHONE	
Archaeology	25	90	0	10	25	100	125	15	30	290	335
Classics	125	285	10	45	135	330	425	60	1,170	1,275	2,500
History	380	90	30	55	410	95	495	35	1,350	215	1,615
English language & literature	80	440	10	35	90	535	520	110	305	1,800	2,105
French language & literature	30	70	5	15	35	80	115	15	100	220	320
Other modern languages											355
Linguistics											
Philosophy	35	820	25	215	60	1,035	860	235	225	1,495	1,720
Religious studies	125	1,895	25	340	150	2,235	2,030	375	435	4,900	5,425
Other	20	60	0	10	20	70	80	5	170	170	340
SUB-TOTAL: HUMANITIES	820	3,750	105	730	925	4,480	4,650	850	3,785	10,455	14,240
Administrative studies	1,055	2,255	5	55	1,060	2,310	3,340	65	4,535	8,445	13,185
Anthropology	5	85	5	20	10	105	145	25	35	155	195
Communication studies	170	130	5	0	175	130	315	0	415	560	975
Economics	135	335	35	45	170	380	475	75	1,030	1,135	2,165
Education	875	1,395	60	130	935	1,525	2,335	185	3,390	20,125	23,515
Geography	15	95	5	50	20	145	110	30	335	480	815
Inter-disciplinary studies	15	135	0	5	15	140	150	5	10	170	180
Law	40	200	10	65	50	265	245	75	1,045	4,500	5,545
Political science	65	260	10	60	75	320	335	40	395	740	1,135
Psychology	160	480	65	115	225	595	660	185	1,135	1,125	2,260
Social work	450	605	0	5	450	610	1,080	5	625	835	1,460
Sociology	50	315	15	25	65	340	375	40	295	975	1,270
Other	35	205	0	40	35	245	250	40	50	605	655
SUB-TOTAL: SOCIAL SCIENCES	3,070	6,495	215	615	3,285	7,110	9,815	770	13,295	39,850	53,145
Other arts	0	0	0	0	0	0	0	0	3,640	7,505	11,145
SUB-TOTAL: HUMAN SCIENCES	3,890	10,245	320	1,345	4,210	11,590	14,465	1,620	20,720	57,810	78,530
Fine arts	65	235	5	20	70	255	295	30	385	1,300	1,685
Agriculture & biol. sciences	275	615	240	420	515	1,035	875	670	1,700	3,475	5,175
Engineering	440	715	95	125	535	840	1,190	220	4,905	8,720	13,625
Health sciences	115	285	10	45	125	330	410	70	2,375	9,670	12,045
Mathematics & phys. sciences	410	640	390	380	800	1,020	1,095	790	2,970	3,215	6,185
Other natural sciences	0	0	0	0	0	0	0	0	680	385	1,065
SUB-TOTAL: NATURAL SCIENCES	1,240	2,255	735	970	1,975	3,225	3,570	1,750	12,630	25,465	38,095
TOTAL	5,195	12,735	1,060	2,335	6,255	15,070	18,330	3,400	33,735	84,575	119,830

SOURCE: Statistics Canada & Ministry of State for Science & Technology, Highly Qualified Manpower Post-Censal Survey 1973, Ottawa 1974

A - Anglophone
F - Francophone
AF - Anglophone and Francophone
T - Total
TL - Total all languages

Table III, 39

FULL-TIME UNIVERSITY ENROLMENT RELATIVE TO TOTAL POPULATION AND POPULATION, AGE 20-29 BY LEVEL OF ENROLMENT,
BY REGION, CANADA, 1940-41 TO 1974-75

REGION & YEAR	FULL-TIME UNDERGRADUATE ENROLMENT (1)	FULL-TIME GRADUATE ENROLMENT (2)	TOTAL FULL-TIME ENROLMENT (3)	POPULATION AGE 20-29 (4)	TOTAL POPULATION (5)
ATLANTIC					
1940-41	3,209	80	3,289	199,130	1,130,410
1950-51	4,972	138	5,110	231,584	1,258,126
1960-61	11,405	370	11,775	233,293	1,897,425
1965-66	19,015	905	19,920	247,588	1,974,758
1970-71	32,394	1,555	33,949	313,300	2,057,265
1974-75	32,750	1,997	34,747	372,400	2,112,600
QUEBEC					
1940-41	10,992	604	11,596	586,296	3,331,882
1950-51	18,612	1,336	19,948	673,757	4,055,681
1960-61	35,862	1,981	37,843	732,200	5,259,211
1965-66	61,506	5,810	67,316	854,903	5,780,845
1970-71	95,297	6,675	101,972	1,027,840	6,027,765
1974-75	125,540	8,235	133,775	1,132,100	6,127,100
ONTARIO					
1940-41	12,120	698	12,818	639,695	3,787,655
1950-51	20,101	1,793	21,894	739,599	4,587,542
1960-61	29,501	2,599	32,100	809,617	6,236,092
1965-66	52,124	6,859	58,983	918,909	6,960,870
1970-71	105,686	13,869	119,555	1,241,480	7,703,105
1974-75	132,600	13,164	145,764	1,450,600	8,226,200
WESTERN					
1940-41	9,378	373	9,751	571,283	3,239,766
1950-51	15,475	1,003	16,478	569,702	3,712,980
1960-61	30,578	1,668	32,246	610,897	4,807,893
1965-66	56,047	3,622	59,669	674,512	5,255,287
1970-71	90,187	8,436	98,623	880,560	5,726,990
1974-75	92,158	7,270	99,428	1,041,500	6,045,000
CANADA					
1940-41	34,699	1,755	36,454	1,999,416	11,506,655
1950-51	59,160	4,270	63,430	2,219,856	14,009,429
1960-61	107,346	6,518	113,864	2,392,943	18,238,247
1965-66	188,692	17,196	205,888	2,703,092	20,014,880
1970-71	323,564	30,815	354,379	3,473,530	21,568,310
1974-75	383,152	31,296	414,448	4,007,400	22,571,600

SOURCE: Statistics Canada, 1971 Census of Canada Population Age Groups, 92-715, Vol. I, Part 2, Ottawa 1973 and sources for enrolment listed following Table III, 43.

Table III, 40

FULL-TIME UNIVERSITY ENROLMENT RELATIVE TO TOTAL POPULATION AND POPULATION AGE 20-29 BY LEVEL OF ENROLMENT, BY REGION, CANADA, 19740-41 TO 1974-75, PERCENTAGE DISTRIBUTIONS

REGION & YEAR	(1) as % of (4)	(2) as % of (4)	(3) as % of (4)	(1) as % of (5)	(2) as % of (5)	(3) as % of (5)	(4) as % of (5)
ATLANTIC							
1940-41	1.61	0.04	1.65	0.28	0.01	0.29	17.6
1950-51	2.15	0.06	2.21	0.40	0.01	0.41	18.4
1960-61	4.89	0.16	5.05	0.60	0.02	0.62	12.3
1965-66	7.68	0.36	8.05	0.96	0.05	1.01	12.5
1970-71	10.34	0.50	10.84	1.57	0.08	1.65	15.2
1974-75	8.79	0.54	9.33	1.55	0.09	1.64	17.6
QUEBEC							
1940-41	1.87	0.10	1.98	0.33	0.02	0.35	17.6
1950-51	2.76	0.20	2.96	0.46	0.03	0.49	16.6
1960-61	4.90	0.27	5.17	0.68	0.04	0.72	13.9
1965-66	7.19	0.68	7.87	1.06	0.10	1.16	14.8
1970-71	9.27	0.65	9.92	1.58	0.11	1.69	17.1
1974-75	11.09	0.73	11.82	2.05	0.13	2.18	18.5
ONTARIO							
1940-41	1.89	0.11	2.00	0.32	0.02	0.34	16.9
1950-51	2.72	0.24	2.96	0.44	0.04	0.48	16.1
1960-61	3.64	0.32	3.96	0.47	0.04	0.51	13.0
1965-66	5.67	0.75	6.42	0.75	0.10	0.85	13.2
1970-71	8.51	1.12	9.63	1.37	0.18	1.55	16.1
1974-75	9.14	0.91	10.05	1.61	0.16	1.77	17.6
WESTERN							
1940-41	1.64	0.07	1.71	0.29	0.01	0.30	17.6
1950-51	2.72	0.18	2.89	0.42	0.03	0.44	15.3
1960-61	5.01	0.27	5.28	0.64	0.03	0.67	12.7
1965-66	8.31	0.54	8.85	1.07	0.07	1.14	12.8
1970-71	10.24	0.96	11.20	1.57	0.15	1.72	15.4
1974-75	8.85	0.70	9.55	1.52	0.12	1.64	17.2
CANADA							
1940-41	1.74	0.09	1.82	0.30	0.02	0.32	17.4
1950-51	2.67	0.19	2.84	0.42	0.03	0.45	15.8
1960-61	4.49	0.27	4.76	0.59	0.06	0.62	13.1
1965-66	6.98	0.64	7.62	0.94	0.09	1.03	13.5
1970-71	9.32	0.89	10.20	1.50	0.14	1.64	16.1
1974-75	9.56	0.78	10.34	1.70	0.14	1.84	17.6

SOURCE: Statistics Canada, 1971 Census of Canada Population Age Groups, 92-715, Vol. 1 Part 2, Ottawa, 1973 and sources for enrolment listed following Table III, 43.

Table no III, 41

FULL-TIME UNIVERSITY ENROLMENT RELATIVE TO POPULATION AGE 20-29, BY LEVEL OF ENROLMENT
CANADA, BY REGION, 1940-41 TO 1974-75, INDEXES

REGION & YEAR	FULL-TIME UNDERGRADUATE ENROLMENT (1)	FULL-TIME GRADUATE ENROLMENT (2)	TOTAL FULL-TIME ENROLMENT (3)	POPULATION AGE 20-29 (4)	TOTAL POPULATION (5)
ATLANTIC					
1940-41	100.0	100.0	100.0	100.0	100.0
1950-51	154.0	172.5	155.4	116.3	111.3
1960-61	355.4	462.5	358.0	117.2	167.9
1965-66	592.6	1,131.3	605.7	124.3	174.7
1970-71	1,009.5	1,943.8	728.2	157.3	182.0
1974-75	1,020.6	2,496.3	1,056.5	187.0	186.9
QUEBEC					
1940-41	100.0	100.0	100.0	100.0	100.0
1950-51	169.3	221.2	172.0	114.9	121.7
1960-61	326.3	328.0	326.3	124.9	157.8
1965-66	559.6	961.9	581.5	145.8	173.5
1970-71	867.0	1,105.1	879.4	175.3	180.9
1974-75	1,142.1	1,363.4	1,153.6	193.1	183.9
ONTARIO					
1940-41	100.0	100.0	100.0	100.0	100.0
1950-51	165.8	256.9	170.8	116.2	121.3
1960-61	243.4	372.3	250.4	127.2	164.6
1965-66	430.1	982.7	460.2	144.3	183.8
1970-71	872.0	1,987.0	932.7	195.0	203.4
1974-75	1,094.1	1,886.0	1,019.7	226.8	217.2
WESTERN					
1940-41	100.0	100.0	100.0	100.0	100.0
1950-51	165.0	268.9	169.0	99.7	114.6
1960-61	326.1	447.2	330.7	106.9	148.4
1965-66	597.6	971.0	611.9	118.1	162.2
1970-71	961.7	2,261.7	1,011.4	154.1	176.8
1974-75	982.7	1,949.1	1,019.7	182.3	186.6
CANADA					
1940-41	100.0	100.0	100.0	100.0	100.0
1950-51	170.5	243.3	174.0	111.0	121.8
1960-61	309.4	371.4	312.3	119.7	158.5
1965-66	543.8	1,116.8	564.8	135.2	173.9
1970-71	932.5	1,755.8	972.1	173.7	187.4
1974-75	1,104.2	1,783.2	1,136.9	200.4	197.7

SOURCE: Statistics Canada, 1971 Census of Canada Population Age Groups, 92-715, Vol I, Part 2, Ottawa, 1973 and sources for enrolment listed following Table III, 43.

UNDERGRADUATE AND TOTAL FULL-TIME UNIVERSITY ENROLMENT
BY REGION, CANADA, 1940-41 TO 1973-74

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UNDERGRADUATE FULL-TIME ENROLMENT					
YEAR	ATLANTIC	QUEBEC	ONTARIO	WESTERN	CANADA
1940-41	3,209	10,992	12,120	7,375	34,699
1950-51	4,972	18,612	20,101	15,475	59,160
1955-56	7,516	21,538	20,037	17,186	66,277
1960-61	11,405	35,862	29,501	30,578	107,346
1961-62	13,044	40,849	32,968	34,686	121,547
1962-63	14,176	44,511	35,941	38,324	132,952
1963-64	15,342	49,737	39,990	42,186	147,255
1964-65	16,980	54,759	45,369	47,333	164,441
1965-66	19,015	61,506	52,124	56,047	188,692
1966-67	20,670	68,570	60,862	62,851	212,953
1967-68	22,897	74,948	69,307	69,668	237,020
1968-69	25,604	81,701	81,091	78,854	267,250
1969-70	28,597	91,555	94,554	85,144	299,850
1970-71	32,394	95,297	105,686	90,187	323,564
1971-72	34,282	101,088	118,039	88,718	342,127
1972-73	33,254	111,996	118,700	84,427	348,377
1973-74	34,071	118,775	124,892	87,574	364,076
TOTAL FULL-TIME ENROLMENT					
YEAR	ATLANTIC	QUEBEC	ONTARIO	WESTERN	CANADA
1940-41	3,829	11,596	12,818	9,751	36,454
1950-51	5,110	19,948	21,894	16,478	63,430
1955-56	7,635	22,591	21,489	17,689	69,404
1960-61	11,775	37,843	32,100	32,246	113,864
1961-62	13,390	43,145	36,217	36,463	129,215
1962-63	14,633	47,324	39,269	40,162	141,388
1963-64	15,857	53,605	44,191	44,735	158,388
1964-65	17,736	59,400	50,793	50,308	178,238
1965-66	19,920	67,316	58,983	59,669	205,888
1966-67	21,700	75,070	68,589	67,313	232,672
1967-68	24,270	82,610	79,089	75,038	261,207
1968-69	27,203	86,678	92,589	85,900	293,370
1969-70	30,480	98,110	108,012	93,479	330,081
1970-71	33,949	101,972	119,555	98,623	354,379
1971-72 ^(a)	35,893	108,350	131,671	97,247	373,161
1972-73	35,123	118,916	131,341	92,324	377,704
1973-74	35,824	125,438	137,964	94,810	393,616

* Graduate enrolment can be found on III, 9.

^(a) Excludes Newfoundland

SOURCE: See list following Table III, 43.

FULL-TIME GRADUATE ENROLMENT AS PERCENTAGE OF TOTAL FULL-TIME UNIVERSITY ENROLMENT, BY REGION, CANADA, 1940-41 TO 1973-74

Table no III, 43

YEAR	ATLANTIC REGION	QUEBEC	ONTARIO	WESTERN REGION	CANADA
1940-41	2.4	5.2	5.4	3.8	4.8
1950-51	2.7	6.7	8.2	6.1	6.7
1955-56	1.6	4.7	6.8	2.8	4.5
1960-61	3.1	5.2	8.1	5.2	5.7
1961-62	2.6	5.3	9.0	4.9	5.9
1962-63	3.1	5.9	8.5	4.6	6.0
1963-64	3.2	7.2	9.5	5.7	7.0
1964-65	4.3	7.8	10.7	5.9	7.7
1965-66	4.5	8.6	11.6	6.1	8.3
1966-67	4.7	8.7	11.3	6.6	8.5
1967-68	5.7	9.3	12.4	7.2	9.3
1968-69	5.9	6.8	12.4	8.2	8.9
1969-70	6.2	6.7	12.5	8.9	9.2
1970-71	4.6	6.5	11.6	8.6	8.7
1971-72	4.5	6.7	10.4	8.8	8.3
1972-73	5.3	5.8	10.4	8.6	7.8
1973-74	4.9	5.7	9.5	7.6	7.5

Note to Tables No III, 39 to III, 43

Sources

Undergraduate enrolment :

1940-41 : Dominion Bureau of Statistics, Higher Education. Education
in Canada (81-402), Ottawa; Table 3 .

1950-51
and

1955-56 : Dominion Bureau of Statistics, University and College
Enrolment, (81-204), Ottawa .

1960-61
to

1972-73 : Statistics Canada, Education in Canada (81-229),
Table 55 , Ottawa

1973-74

and

1974-75 : Statistics Canada, Advance Statistics of Education (81-220)

Graduate enrolment :

1940-41 :
1950-51 : Same as for undergraduate
1955-56 :

1960-61
and

following: Dominion Bureau of Statistics, Survey of Higher Education
(81-204) and Statistics Canada, Fall Enrolment in Univer-
sities and Colleges (81-204) .

Includes students in programs at the university level regardless of the
type of institution in which they are enrolled .

Includes students in university equivalent programs at other post-secondary
institutions for example, community colleges, as well as those in regular
undergraduate courses .

(a)
Enrolments in Higher Education
(in thousands)

	1950	1960	1965	1970
Austria	22.5	38.9	50.1	62.5
Belgium	30.2	52.0	84.0	127.1*
Denmark	19.5	32.5	53.2	77.1
Finland	17.6	29.2	48.5	67.1
France	185.4	256.0	527.0	778.8 (1)
Germany	146.9*	313.2 (3)	367.4	494.9
Greece	15.3*	30.5	66.7	84.6 (1)
Iceland	0.6*	0.8*	1.1*	1.4*
Ireland	11.2	14.0	20.7	26.2
Italy	240.7	284.3	424.7	694.2
Luxembourg	0.3	0.5	0.7	0.6
Netherlands	63.5*	109.4	152.6	229.5
Norway	13.3	21.7	35.9	49.3
Portugal	14.4	24.0	34.5	52.0
Spain	113.8*	185.4	274.1	351.9
Sweden	27.3	47.9	83.5	145.7
Switzerland	18.3	30.0*	35.0*	43.0 (2)
Turkey	27.7*	65.4	103.1	155.4
United Kingdom	294.7*	287.7*	433.4*	589.7 (1)
Yugoslavia	60.4	140.6	184.9	261.2
Australia	34.9*	70.7*	131.7*	175.4
Canada	167.0	286.3	471.3	711.1 (1)
Japan	240.0	712.0	1,093.0	1,635.6
United States	2,297.0	3,610.0	5,570.3	7,608.0

* Estimate. (1) 1969. (2) 1968. (3) 1961.

(b)
Enrolments in University-type Higher Education
(in thousands)

	1950	1960	1965	1970
Austria	22.5	38.5	48.9	54.9
Belgium	20.2	30.7	48.8	75.1
Denmark	13.1	14.4	29.9	46.1
Finland	14.4	23.5	40.2	58.1
France	156.4*	206.2	434.6	654.8 (1)
Germany	122.2	257.9 (3)	298.1	407.1
Greece	13.1*	25.7	54.2	72.6 (1)
Iceland	0.6*	0.8*	1.1*	1.4*
Ireland	7.2	9.8	15.4	19.6
Italy	236.2	276.8	415.5	631.7
Luxembourg	0.1	0.1	0.2	0.2
Netherlands	29.7	40.3	64.4	103.4
Norway	7.0	9.3	19.5	30.5
Portugal	13.3	19.6	26.1	41.1
Spain	54.6	77.1	125.9	213.1
Sweden	16.7	36.2	66.2	120.0
Switzerland	17.1	n.a.	n.a.	33.1 (2)
Turkey	24.8	51.2	66.9	92.6
United Kingdom	115.2*	146.6*	211.6	295.3 (1)
Yugoslavia	54.8	103.4	116.3	180.1
Canada	84.7*	145.1	279.8	423.6 (1)
Japan	224.9	628.5	338.0	1,405.5
United States	2,079.0	3,156.4	4,725.1	6,124.0

* Estimate. (1) 1969. (2) 1968. (3) 1961.

SOURCE: Organization for Economic Co-operation and Development, Towards Mass Higher Education; Issues and Dilemmas, OECD, Paris, 1974, tables A & B, p. 54.

Growth rate of enrolments in higher education

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	1950-60	1960-70	1960-65	1965-70
Australia	5.8	11.1	13.2	9.0
Austria	5.6	4.9	5.2	4.5
Belgium	5.6	9.3	10.1	8.7
Canada	5.5	10.6 (2)	10.5	10.8 (3)
Denmark	5.3	9.0	10.4	7.7
Finland	5.2	8.6	10.7	6.7
France	3.3	13.2 (2)	15.5	10.3 (3)
Germany	7.9 (6)	4.7 (4)	3.3 (5)	6.2
Greece	7.1	12.0 (2)	17.0	6.1 (3)
Iceland	2.9	5.8	6.6	4.9
Ireland	2.3	6.5	8.1	4.9
Italy	1.7	9.6	8.4	10.3
Japan	11.5	9.0	8.9	9.1
Luxembourg	5.3	1.8	6.9	-3.0
Netherlands	5.6	7.7	6.9	8.5
Norway	5.0	8.5	10.6	6.6
Portugal	5.3	8.1	7.5	8.5
Spain	5.0	6.6	8.1	5.1
Sweden	5.8	11.8	11.7	11.8
Switzerland	5.0	4.6 (1)	3.2	7.1 (7)
Turkey	9.0	9.1	9.5	8.6
United Kingdom	-0.3	8.3 (2)	8.5	8.0 (3)
United States	4.6	7.7	9.0	6.5
Yugoslavia	8.8	6.4	5.6	7.1
Average	5.4	8.1	9.0	7.3

(1) 1960-68.

(5) 1961-65.

(2) 1960-69.

(6) 1950-61.

(3) 1965-69.

(7) 1965-68.

(4) 1961-70.

SOURCE: Taken from Organization for Economic Co-operation and Development, Towards Mass Higher Education; Issues and Dilemmas, OECD, Paris, 1974, Table 3, p. 18.

Enrolment rates and ratios in
post-secondary education

	Enrolment ratio (as percentage of the popula- tion of the 20-24 age group)		Approximate enrolment rates			Age group considered
	1960	1970	1960	1965	1970	
Austria	7.5	12.4	4.5	6.4	10.5	19-24
Belgium	9.4	15.5	8.0	11.0	14.7	18-23
Denmark	10.5	18.7	7.7	9.6	13.8	19-25
Finland	9.0	14.5	7.4	10.3	12.2	19-24
France	9.1	19.8	7.8	12.5	15.1	18-23
Germany	6.5	12.7	5.4	7.2	10.9	20-25
Greece	3.9	11.8*	2.8	6.5	..	18-24
Ireland	8.2	12.6	7.3	8.0	..	18-22
Italy	7.0	16.3	5.5	8.7	12.1	19-25
Netherlands	13.3	19.1	9.5	10.6	14.0	18-24
Norway	10.2	15.7	8.6	10.9	13.3	19-24
Portugal	3.4	7.8	2.5	3.6	5.0	18-24
Spain	8.6	14.1	6.0	8.1	9.6	18-24
Sweden	10.3	22.6	10.3	13.6	22.6	20-24
Switzerland	6.5	8.3*	5.5	6.6	7.0	20-25
Turkey	2.9	5.2	2.3	3.2	3.9	18-23
United Kingdom	8.5	13.7	8.7	10.7	14.3	18-22
Yugoslavia	8.9	15.5	6.1	9.2	10.5	19-25
Australia	10.3	15.6	11.6	16.8	18.4*	17-20
Canada	24.2	39.1	19.3	27.3	30.7*	18-23
Japan	8.4	15.6	8.1	12.0	16.2	18-22
United States	31.5	42.6	25.9	31.4	35.1	18-23

* 1969/70.

SOURCE: Taken from Organization for Economic Co-operation and Development, Towards Mass Higher Education; Issues and Dilemmas, OECD, Paris, 1974, Table 9, p. 24.

Trend in the proportion of students in post-graduate
education (as a percentage of total enrolments in
university education)

	1960-61	1964-65	1970-71
Canada	5.5*	7.8	10.5
France	9.8*	10.7	10.9
Norway	23.0	19.0	25.6
United Kingdom	16.6	17.4	18.4
United States	9.9	10.4	14.3

* Full-time students 1959-60.

SOURCE: Taken from Organization for Economic
Co-operation and Development, Towards
Mass Higher Education; Issues and
Dilemmas, OECD, Paris, 1974, Table 6,
p. 20.

First degree in university-type
education

	Number of graduates (in thousands)			As a percentage of a single-year age	
	1960	1965	1970	1960	1970 (4)
Austria	2.3	3.2	4.0	2.90	3.3
Belgium	4.2	4.4	6.5(2)	3.66	4.85
Denmark	1.3	1.7	3.8(3)	2.30	4.60
France	12.2	30.8	32.4(1)	2.06	5.20
Germany	21.2	21.5	..	2.80	..
Greece	4.5	4.6	7.9(2)	3.10	6.25
Italy	25.5	33.0	37.8(1)	3.26	4.70
Netherlands	3.5	4.0	7.2	2.30	3.75
Norway	1.4	1.8	2.5	3.54	4.94
Portugal	1.4	1.4	2.3	1.00	1.50
Spain	5.3	7.6	12.1(2)	1.10	2.40
Sweden	4.1	6.2	14.8(3)	4.60	11.00
Switzerland	1.8	2.5	2.7	1.50	3.30
Turkey	4.0	6.5	10.9	0.80	1.94
United Kingdom	24.7	34.6	47.0(1)	3.55	5.46
Yugoslavia	11.8	12.8	14.4	3.52	5.10
Canada	19.7	37.7	60.5(2)	8.55	19.42
Japan	122.0	178.0	241.0(1)	7.43	10.00
United States	406.7	551.0	865.0	15.40	26.80

(1) 1968-69.

(3) 1971-72.

(2) 1969-70.

(4) or most recent year.

SOURCE: Taken from Organization for Economic
Co-operation and Development, Towards Mass
Higher Education; Issues and Dilemmas,
OECD, Paris 1974, Table 26, p. 48.

United States Graduates (Higher Education)

Branch	Year		Trend in 69-70 (1959-60=100)
	1959-60	1969-70	
Bachelor's degree			
- human sciences	76.8	81.7	215
- pure and applied sciences	23.2	18.3	159
Total	100.0	100.0	202
Master's degree			
- human sciences	78.7	81.0	290
- pure and applied sciences	21.3	19.0	251
Total	100.0	100.0	281
Doctorate			
- human sciences	53.9	52.9	296
- pure and applied sciences	46.7	47.1	300
Total	100.0	100.0	298

Source: American Council on Education: A Fact Book on Higher Education, 1971.

SOURCE: Taken from Organization for Economic Co-operation and Development, Towards Mass Higher Education; Issues and Dilemmas, OECD, Paris, 1974, table 26, p. 146.

Percentage of GNP allocated to Higher Education

	1961	1970
Australia	0.3 (1958)	0.8 (1970)
Belgium	0.2	1.0 (1969)
Canada	0.5	2.7
Denmark	0.3	1.2
France	0.2	0.6
Federal Republic of Germany	0.4	0.7
Japan	1.2	1.0 (1969)
Netherlands	0.3	1.2 (1969)
Norway	0.3	0.7
Sweden	0.3	1.0
UK	-	-
USA	1.1 (1959/60)	2.5 (1970/71)
Average	0.5	1.3

SOURCE: Taken from Organization for Economic Co-operation and Development, Towards Mass Higher Education; Issues and Dilemmas, OECD, Paris, 1974, Table 2, p. 179.

Table No. 111, 51

Student/teacher ratios: 1960 and 1970

	1960	1970-71
Australia	12.0	12.2
Belgium	10.4	8.0
Canada	11.6	15.5
Denmark	9.5	12.2
France	25.7	15.4
Federal Republic of Germany	11.8	11.2
Japan	10.1	18.4
Netherlands	21.3	18.4
Norway	7.2	11.5
Sweden	10.1	19.5
UK	8.6	9.6
USA	10.4	9.3

Sources: Quantitative Trends in Teaching Staff in Higher Education, OECD, Paris, 1971; 1970-71: Temporary data calculated by the Secretariat (1972).

Source : Taken from Organization for Economic Co-operation and Development, Towards Mass Higher Education: Issues and Dilemmas, OECD, Paris, 1974, Table 7, p. 188.

Table 11, 52
SIZE AND PROPORTION OF GRADUATE ENROLLMENT AT SELECTED CANADIAN UNIVERSITIES, 1974-75*

UNIVERSITY	FULL-TIME UNDERGRADUATE (1)	FULL-TIME EQUIVALENT UNDERGRADUATE (2)	TOTAL ADJUSTED UNDERGRADUATE (3)	FULL-TIME GRADUATE (4)	FULL-TIME EQUIVALENT GRADUATE (5)	TOTAL ADJUSTED GRADUATE (6)	TOTAL ADJUSTED ENROLLMENT (8)	(6) as % of (8)	TOTAL FULL-TIME ENROLLMENT (7)	(4) as % of (7)
Alberta 1	16,061	609	16,670	1,696	250	1,946	18,616	10.5	17,757	9.6
British Columbia 3	15,937	802	16,739	2,092	226	2,318	19,057	12.2	18,029	11.6
Bishop's 2	679	28	707	6	9	15	722	2.1	685	0.9
Brock 4	2,021	609	2,630	55	7	62	2,692	2.3	2,076	2.6
Calgary 5	8,497	548	9,045	782	143	925	9,970	9.3	9,279	8.4
Carleton 6	7,083	668	7,751	706	174	880	8,631	10.2	7,789	9.1
Concordia 7	8,174	2,326	10,500	444	425	869	11,369	7.6	8,618	5.2
Dalhousie 8	5,547	145	5,692	779	84	863	6,555	13.2	6,326	12.3
Guelph 9	8,324	183	8,507	589	46	635	9,142	6.9	8,913	6.6
Laurentian ***** 10	1,996	707	2,703	33	10	43	2,746	1.6	2,029	1.6
Laval 11	11,367	744	12,111	1,375	376	1,751	13,862	12.6	12,742	10.8
Manitoba 12	11,356	1,330	12,686	1,144	327	1,471	14,157	10.4	12,500	9.2
McGill 13	11,719	380	12,099	2,861	264	3,125	15,224	20.5	14,580	19.6
McMaster 14	7,665	871	8,536	1,294	201	1,495	10,031	14.9	8,959	14.4
Memorial 15	4,616	857	5,473	502	97	599	6,072	9.9	5,118	9.8
Moncton 16	2,825	814	3,639	140	53	193	3,832	5.0	2,965	4.7
Montréal ** 17	12,463	1,091	13,554	2,096	1,029	3,125	16,679	18.7	14,559	14.4
New Brunswick 18	4,804	371	5,175	364	23	387	5,562	7.0	5,168	7.0
Nova Scotia Tech. 19	440	1	441	26	17	43	484	8.9	466	5.6
Ottawa 20	8,320	968	9,288	995	590	1,585	10,873	14.6	9,315	10.7
Quebec *** 21	9,169	3,338	12,507	603	170	773	13,280	5.8	9,772	6.2
Queen's 22	8,501	445	8,946	1,000	172	1,172	10,118	11.6	9,501	10.5
Regina 23	2,303	364	2,667	98	63	161	2,828	5.7	2,401	4.1
Saskatchewan 24	8,081	968	9,049	425	117	542	9,591	5.7	8,506	5.0
Sherbrooke 25	3,292	285	3,577	829	0	829	4,406	18.8	4,121	20.1
Simon Fraser 26	4,183	372	4,555	703	53	761	5,316	14.3	4,886	14.4
St. Francis Xavier 27	2,004	0	2,004	8	0	8	2,012	0.4	2,012	0.4
St. Mary's 28	2,209	309	2,518	20	19	39	2,557	1.5	2,229	0.9
Toronto *** 29	25,357	2,260	27,617	4,307	1,021	5,328	32,945	16.2	29,664	14.5
Trent 30	1,970	289	2,259	11	2	13	2,272	0.6	1,981	0.6
Victoria 31	4,719	339	5,058	186	75	261	5,319	4.9	4,905	3.8
Waterloo 32	12,104	376	12,480	1,217	199	1,416	13,896	10.2	13,321	9.1
Western Ontario 33	12,201	1,042	13,243	1,584	130	1,714	14,957	11.5	13,785	11.5
Sir Wilfrid Laurier 34	2,367	865	3,232	207	29	236	3,468	6.8	2,574	8.0
Windsor 35	5,261	922	6,183	417	123	540	6,723	8.0	5,678	7.3
York	10,212	2,835	13,047	1,005	335	1,340	14,387	9.3	11,217	9.0
SUB-TOTAL: 1 - 36	263,827		292,888	30,599		37,463	330,350	11.3	294,426	10.4
TOTAL	288,006	32,203	320,209	31,296	6,990	38,286	358,495	10.7	319,302	9.8

* Degree-level programs only. (2) (4) Full-time equivalent enrolment is by convention calculated by dividing the part-time by 3.

** * Includes Ecole Polytechnique et Ecole des Hautes Etudes Commerciales. *** Includes affiliated colleges.

**** Inclut l'ensemble des constituantes (Montréal, Trois-Rivières, Chicoutimi et Rimouski). ***** Only Sudbury.

Note: The data used in this table differs somewhat from that presented in

III, 10.-III, 10.5. In making comparisons using adjusted data, it was decided to ensure maximum consistency by using only Statistics Canada data, thus ensuring comparability of the data in regard to institutional composition and the definition of part-time and full-time enrolment, and graduate and undergraduate enrolment.

Post-doctoral students by field of study and by region*, 1972

	Human Sciences	Mathematics & Physical Sciences	Engineering & Applied Sciences	Life Sciences	Health Sciences	TOTAL
Atlantic Provinces	17 (15.9)	61 (57.0)	8 (7.5)	4 (3.7)	17 (15.9)	107 (100.0)
Québec	13 (3.1)	113 (26.7)	57 (13.5)	69 (16.3)	171 (40.4)	423 (100.0)
Ontario	35 (3.6)	446 (46.4)	87 (9.0)	90 (9.4)	304 (31.6)	962 (100.0)
Western Provinces	24 (3.1)	364 (46.7)	68 (8.7)	135 (17.3)	189 (24.2)	780 (100.0)
TOTAL	89 (3.9)	984 (43.3)	220 (9.6)	298 (13.2)	681 (30.0)	2,272 (100.0)

*Percentage figures in brackets.

SOURCE: Von Zur-Muehlen, Max, Post-Doctorals in Canada in the Mid-Seventies, Department of Secretary of State, Ottawa, Dec. 1975, Table 1.

Post-doctoral students in the natural sciences at Ontario universities, 1967-68 to 1973-74

	Physical Sciences	% Annual Change	Mathematical Sciences	% Annual Change	Engineering	% Annual Change	Life Sciences	% Annual Change	TOTAL*	% Annual Change
1967-68	250		17		50		52		369	
1969-70	291	16.4	28	64.7	59	18.0	82	57.7	460	24.7
1971-72	398	36.8	48	71.4	87	47.5	90	8.5	623	35.4
1973-74	470	18.7	59	26.2	103	18.0	105	16.7	737	18.3

*Excludes the Health Sciences.

SOURCE: Von Zur-Muehlen, Max, Post-Doctorals in Canada in the Mid-Seventies, Department of Secretary of State, Ottawa, Dec. 1975, Table 3.

Table III, 55.1
Summary PhD Completion Rate

Characteristic	Total N	With degree completed	Completion rate (%)
All respondents	1,032	640	62.0
<u>Year in course</u> (in 1968-69)			
Year 1 (registered in 1968)	320	144	45.0
Year 2 (registered in 1967)	299	192	64.2
Year 3 (registered in 1966)	231	159	68.8
Year 4 (registered in 1965 or before)	182	145	79.7
<u>Type of doctoral program</u>			
Course work and thesis	798	493	61.8
Thesis only	234	147	62.8
<u>Country of university to award the degree</u>			
Canada	428	231	54.0
Abroad	604	409	67.7
United States	295	216	73.2
United Kingdom	165	100	60.6
France	104	69	66.3
Other	40	24	60.0
<u>Discipline division</u>			
Social sciences	576	345	59.9
Humanities	456	295	64.7
<u>Age</u> (at January 1969)			
20-24	169	99	58.6
25-29	512	309	60.4
30-34	190	122	64.2
35+	161	110	68.3
<u>Sex</u>			
Female	185	101	54.6
Male	847	539	63.6
<u>Marital Status</u> (at January 1969)			
Married	669	437	65.3
Single and others	363	203	55.9
<u>Dependents</u> (at January 1969)			
Without children	678	409	60.3
With children	354	231	65.3
<u>Citizenship</u> (at January 1969)			
Canadian	876	528	60.3
Landed immigrant	156	112	71.8
<u>Language</u> (that used in questionnaire)			
English	814	517	63.5
French	218	123	56.4

SOURCE : Canada Council, Doctoral Fellows... What happens?
(Prepared by René M. Lemieux) Canada Council,
Ottawa, 1976 , Table 1 .

Table no 55.2

PhD Completion Rate by Type of Doctoral Program and Year in Course

Type of doctoral program and year in course	Total N	With degree completed	Completion rate (%)
<u>Course work and thesis</u>			
Year 1	230	99	43.0
Year 2	224	140	62.5
Year 3	195	137	70.3
Year 4	149	117	78.5
<u>Total</u>	<u>798</u>	<u>493</u>	<u>61.8</u>
<u>Thesis only</u>			
Year 1	90	45	50.0
Year 2	75	52	69.3
Year 3	36	22	61.1
Year 4	33	28	84.8
<u>Total</u>	<u>234</u>	<u>147</u>	<u>62.8</u>

SOURCE : Canada Council, Doctoral Fellows..What Happens ?
 (Prepared by René M. Lemieux) Canada Council,
 Ottawa, 1976, Table 2 .

Table no 55.3

PhD Completion Rate by Country of University to Award the Degree
and Year in Course

Country and year in course	Total N	With degree completed	Completion rate (%)
<u>Canada</u>			
Year 1	121	35	28.9
Year 2	129	75	58.1
Year 3	102	66	64.7
Year 4	76	55	72.4
<u>Total</u>	<u>428</u>	<u>231</u>	<u>54.0</u>
<u>United States</u>			
Year 1	70	40	57.1
Year 2	70	50	71.4
Year 3	83	65	78.3
Year 4	72	61	84.7
<u>Total</u>	<u>295</u>	<u>216</u>	<u>73.2</u>
<u>Other</u>			
Year 1	129	69	53.5
Year 2	100	67	67.0
Year 3	46	28	60.9
Year 4	34	29	85.3
<u>Total</u>	<u>309</u>	<u>193</u>	<u>62.5</u>

SOURCE: Canada Council , Doctoral Fellows..What Happens ?

(Prepared by René M. Lemieux) Canada Council, Ottawa, 1976, Table 3.

Table no 55.4

PhD Completion Rate by Selected Single Discipline*

Discipline	Total N	With degree completed	Completion rate (%)
<u>Social sciences</u>			
Administrative studies	28	18	64.3
Anthropology	32	15	46.9
Economics	101	73	73.3
Geography	29	20	69.0
History	148	87	58.8
Political science	84	43	51.2
Psychology	29	21	72.4
Sociology	59	31	52.5
Other social sciences	66	37	56.1
<u>Total social sciences</u>	<u>576</u>	<u>345</u>	<u>59.9</u>
<u>Humanities</u>			
English	136	92	67.6
French	79	53	67.1
Other language and literature	98	61	62.2
Philosophy	73	45	61.6
Other humanities	70	44	62.9
<u>Total humanities</u>	<u>456</u>	<u>295</u>	<u>64.7</u>
* Selected on the basis of 25 or more respondents.			

SOURCE : Canada Council , Doctoral Fellows..What Happens ? (Prepared by René M. Lemieux) Canada Council, Ottawa, 1976, Table 4 .

Table no III,55.5

AVERAGE TIME ELAPSED BETWEEN STAGES OF DOCTORAL STUDIES, BY TYPE OF DOCTORAL PROGRAM AND BY LEVEL OF ENTRY INTO PROGRAM,
BY COUNTRY OF UNIVERSITY TO AWARD THE DOCTORATE*

TYPE OF DOCTORAL PROGRAM AND LEVEL OF ENTRY INTO PROGRAM	COUNTRY OF UNIVERSITY TO AWARD DOCTORATE											
	CANADA			UNITED STATES			ABROAD			TOTAL**		
	NUMBER OF STUDENTS	AVERAGE DURATION (in years)	NUMBER OF STUDENTS	AVERAGE DURATION (in years)	NUMBER OF STUDENTS	AVERAGE DURATION (in years)	FRANCE		NUMBER OF STUDENTS	AVERAGE DURATION (in years)	NUMBER OF STUDENTS	AVERAGE DURATION (in years)
							NUMBER OF STUDENTS	AVERAGE DURATION (in years)				
<u>Course work and thesis</u>												
From Honours B.A.												
Enrolment to A.B.D.	11	2.5	50	2.5	0	0.0	0	0.0	0	0.0	63	2.6
A.B.D. to Ph.D.	11	3.2	50	2.8	0	0.0	0	0.0	0	0.0	63	2.8
Enrolment to Ph.D.	11	5.6	50	5.4	0	0.0	0	0.0	0	0.0	63	5.4
From M.A.												
Enrolment to A.B.D.	183	2.1	145	2.3	3	2.7	38	1.9	362	2.1		
A.B.D. to Ph.D.	183	2.9	145	3.1	3	1.7	38	1.9	382	2.8		
Enrolment to Ph.D.	183	4.9	145	5.4	3	4.3	38	3.8	382	4.9		
<u>Thesis only</u>												
From Honours B.A.	2	4.0	0	0.0	8	5.0	3	4.6	13	4.8		
From M.A.	7	6.3	2	5.5	88	4.0	26	3.2	133	4.1		

*Covers only those award recipients who both have completed their doctoral studies and have answered all the relevant survey questions needed to make accurate calculations of the length of their programs.

**Includes other countries besides those listed.

SOURCE: Canada Council; based on unpublished data from the study "Doctoral Fellows...What Happens?; Report on a follow-up study of 1968-69 Canada Council doctoral fellows", by René H. Lemieux.

Table no III, 55,6

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AVERAGE TIME ELAPSED BETWEEN STAGES OF DOCTORAL STUDIES, BY TYPE OF DOCTORAL AND BY LEVEL OF ENTRY INTO PROGRAM,
FOR SELECTED DISCIPLINES IN THE HUMANITIES AND THE SOCIAL SCIENCES*

TYPE OF DOCTORAL PROGRAM AND LEVEL OF ENTRY INTO PROGRAM	HUMANITIES								
	HISTORY		ENGLISH		FRENCH		PHILOSOPHY		SUB-TOTAL: SELECTED HUMANITIES
	NUMBER OF STUDENTS	AVERAGE DURATION (in years)	NUMBER OF STUDENTS	AVERAGE DURATION (in years)	NUMBER OF STUDENTS	AVERAGE DURATION (in years)	NUMBER OF STUDENTS	AVERAGE DURATION (in years)	
<u>Course work and thesis</u>									
From Honours B.A.									
Enrolment to A.B.D.	2	4.0	6	3.0	3	1.3	8	2.6	19
A.B.D. to Ph.D.	2	4.0	6	2.2	3	3.7	8	3.0	19
Enrolment to Ph.D.	2	8.0	6	5.2	3	5.0	8	5.6	19
From M.A.									
Enrolment to A.B.D.	39	2.2	47	2.3	36	2.1	25	1.7	147
A.B.D. to Ph.D.	39	2.8	47	2.8	36	2.5	25	2.6	147
Enrolment to Ph.D.	39	5.1	47	5.1	36	4.6	25	4.3	147
<u>Thesis only</u>									
From Honours B.A.	3	6.0	3	3.0	1	6.0	1	5.0	8
From M.A.	6	4.3	33	4.1	13	3.6	9	4.0	61
	</								

* Covers only those award recipients who both have completed their doctoral studies and have answered all the relevant survey questions needed to make accurate calculations of the length of their programs.

** Excludes anthropology, demography and criminology.

SOURCE: Canada Council; based on unpublished data from the study "Doctoral Fellows... What Happens?; Report on a follow-up study of 1968-69 Canada Council doctoral fellows", by René H. Lemieux.

Table no III, 55.6 (continued)

AVERAGE TIME ELAPSED BETWEEN STAGES OF DOCTORAL STUDIES, BY TYPE OF DOCTORAL AND BY LEVEL OF ENTRY INTO PROGRAM,
FOR SELECTED DISCIPLINES IN THE HUMANITIES AND THE SOCIAL SCIENCES*

TYPE OF DOCTORAL PROGRAM AND LEVEL OF ENTRY INTO PROGRAM	SOCIAL SCIENCES										SUB-TOTAL:	
	ECONOMICS			POLITICAL SCIENCE			PSYCHOLOGY			SOCIOLOGY**		SELECTED SOCIAL SCIENCES NUMBER (OF STUDENTS)
	NUMBER OF STUDENTS	AVERAGE DURATION (in years)	NUMBER OF STUDENTS	AVERAGE DURATION (in years)	NUMBER OF STUDENTS	AVERAGE DURATION (in years)	NUMBER OF STUDENTS	AVERAGE DURATION (in years)	NUMBER OF STUDENTS	AVERAGE DURATION (in years)	NUMBER OF STUDENTS	
<u>Course work and thesis</u>												
From Honours B.A.												
Enrolment to A.B.D.	24	2.4	3	2.7	2	2.5	5	2.6	34	2.5		
A.J.D. to Ph.D.	24	2.7	3	4.0	2	0.5	5	2.6	34	2.7		
Enrolment to Ph.D.	24	5.1	3	6.7	2	3.0	5	5.2	34	5.1		
<u>From M.A.</u>												
Enrolment to A.B.D.	39	2.2	26	2.2	12	2.7	19	1.9	96	2.2		
A.J.D. to Ph.D.	39	2.8	26	3.0	12	0.7	19	3.0	96	2.6		
Enrolment to Ph.D.	39	5.1	26	5.2	12	3.3	19	4.9	96	4.9		
<u>Thesis only</u>												
From Honours B.A.	1	7.0	0	0.0	1	3.0	0	0.0	4	2.5		
From M.A.	6	4.3	11	3.9	2	5.0	5	3.8	24	4.1		

* Covers only those award recipients who both have completed their doctoral studies and have answered all the relevant survey questions needed to make accurate calculations of the length of their programs.

** Excludes anthropology, demography and criminology.

SOURCE: Canada Council; based on unpublished data from the study "Doctoral Fellows... What Happens?; Report on a follow-up study of 1968-69 Canada Council doctoral fellows", by René H. Lemieux.

Table III, 56

COHORT ANALYSES FROM SAMPLE DEPARTMENTS IN THREE FIELDS OF STUDY⁽³⁾

COHORT ANALYSES FROM SAMPLE DEPARTMENTS IN THREE FIELDS OF STUDY

Field of Study	Activity	Ph.D. Cohort of 1968								Ph.D. Cohort of 1969								Ph.D. Cohort of 1970								Total
		1968	1969	1970	1971	1972	1973	1974	Total	1969	1970	1971	1972	1973	1974	Total	1970	1971	1972	1973	1974	Total				
HUMANITIES	1 Admitted - Ph.D. & Working to Comprehensives	16	13	2	2				3	13	11	4	2	1	1	3	18	15	8	2		1	6			
	2 Stopped before Comprehensives			1	1						2	7	1	1	1	10	3	3	7	3		10				
	3 Comprehensive Completed*		3	10	5	2			13		11	8	6	2					8	6						
	4 Research, Full-time*			11	8	11	11	9				4	5	6	2	4		3	3	4	10					
	5 Research, Part-time*			2					1				1	1	2	0				1		1				
	6 Dissertation Time Requested					1		2	0					3	1	4						0				
	7 Extension of Time Requested					1			3											1		1				
	8 Degree Completed																									
SOCIAL SCIENCES	1 Admitted - Ph.D. & Working to Comprehensives	26	7	1					7	17	9	2				6	22	16	7	2			6			
	2 Stopped before Comprehensives	2	2	3	1				19		3	4	2			11	2	2	9	4	1		14			
	3 Comprehensive Completed*		15	3							5			1				4	1	6						
	4 Research, Full-time*			11	10	5	3					3	1	7					1	3	7					
	5 Research, Part-time*			3	7	12	9		2			2	6			0			3			0				
	6 Dissertation Time Requested			1			1		0					1		0						0				
	7 Extension of Time Requested								5				2	1		3						0				
	8 Degree Completed						4															0				
NATURAL SCIENCES	1 Admitted - Ph.D. & Working to Comprehensives	24	5	1					6	35	4					9	17	1	1			6				
	2 Stopped before Comprehensives		3	2	1				18		9	4				26		5	1			11				
	3 Comprehensive Completed*		16	2							22							11		3						
	4 Research, Full-time*			15	6							20	11	1	2	5			11	2	1	1				
	5 Research, Part-time*				5	4	1					1	2	4	2	0										
	6 Dissertation Time Requested				2	1	2						3									0				
	7 Extension of Time Requested							1	1					8	1	19				6	2	8				
	8 Degree Completed			1	4	6	1		12				9													

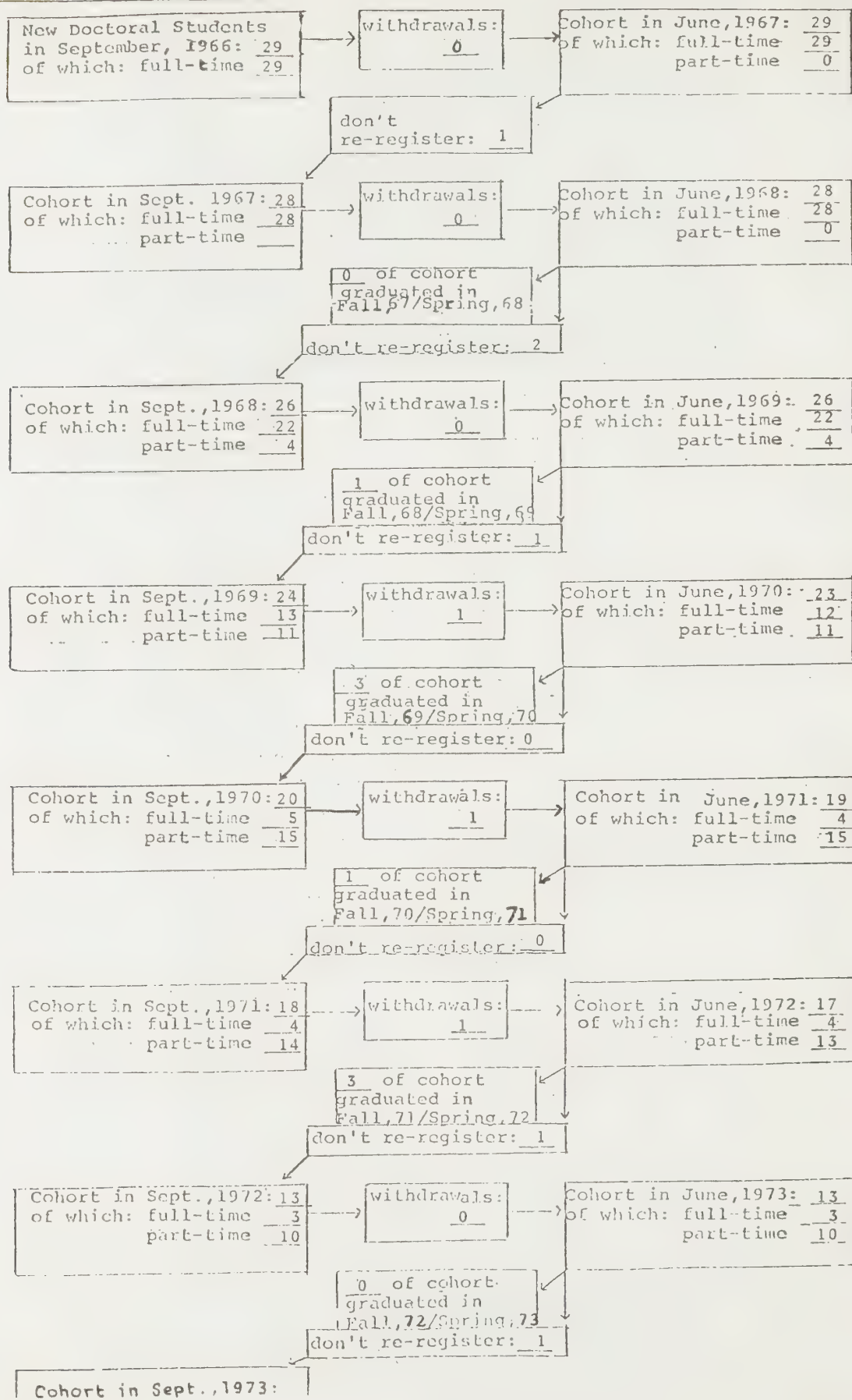
⁽³⁾ see attached list.⁽⁴⁾ figures over 10.⁽⁵⁾ only followed up in 1973

SOURCE: University of Toronto Study Group

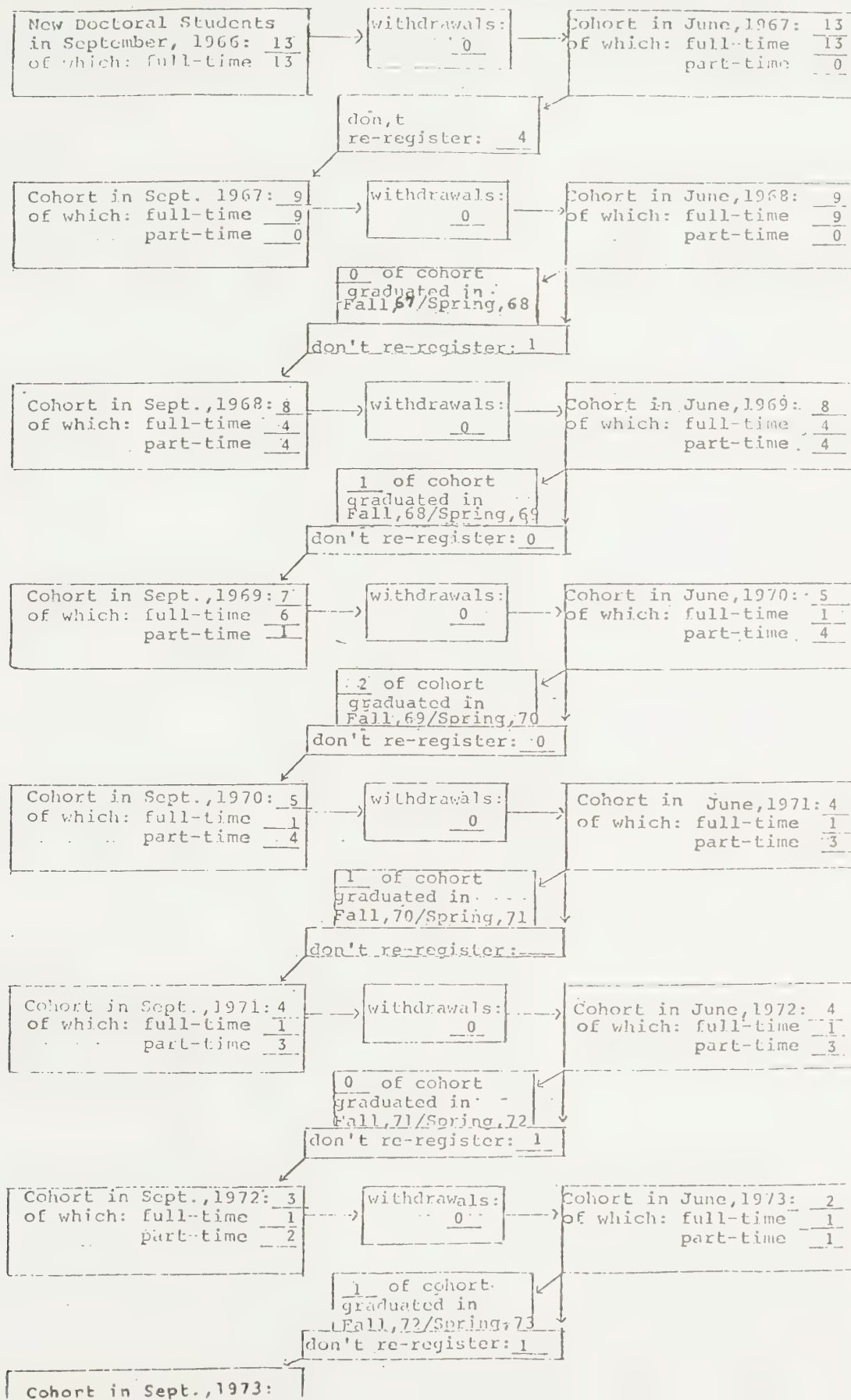
The figures given on the length of time to complete the Ph.D. in the respective divisions deal, of course, only with the candidates who are successful in their pursuit of that degree. The following cohort analyses of three sample departments, one in the Humanities, one in the Social Sciences, and one in the Sciences, provide a different picture of the progress of graduate students through their doctoral program. The year of the cohort is the year each group entered the doctoral program, that is after completion of the masters, normally therefore the second year of graduate study. The years selected were 1968, 1969 and 1970. The cohorts and the departments are samples only, our choice being restricted by the material readily available, but they may serve as useful comparisons of the patterns of progress. Although the samples are small, certain interesting points can be noted: the year in which the comprehensive examinations are taken, the proportion of students doing research part-time, the number of students withdrawing from the program and, of course, the length of time to complete the degree.

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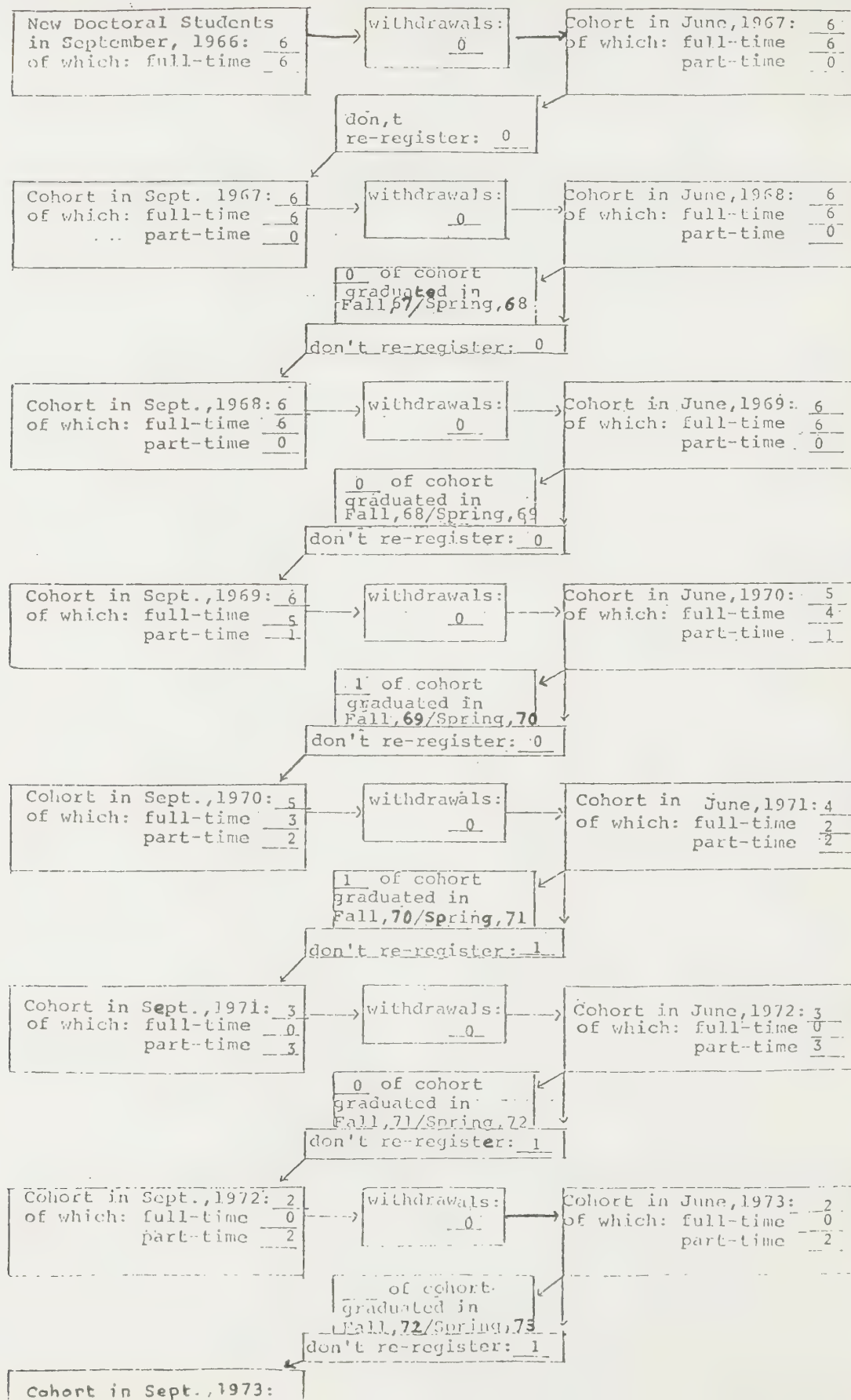
Sample discipline in Humanities



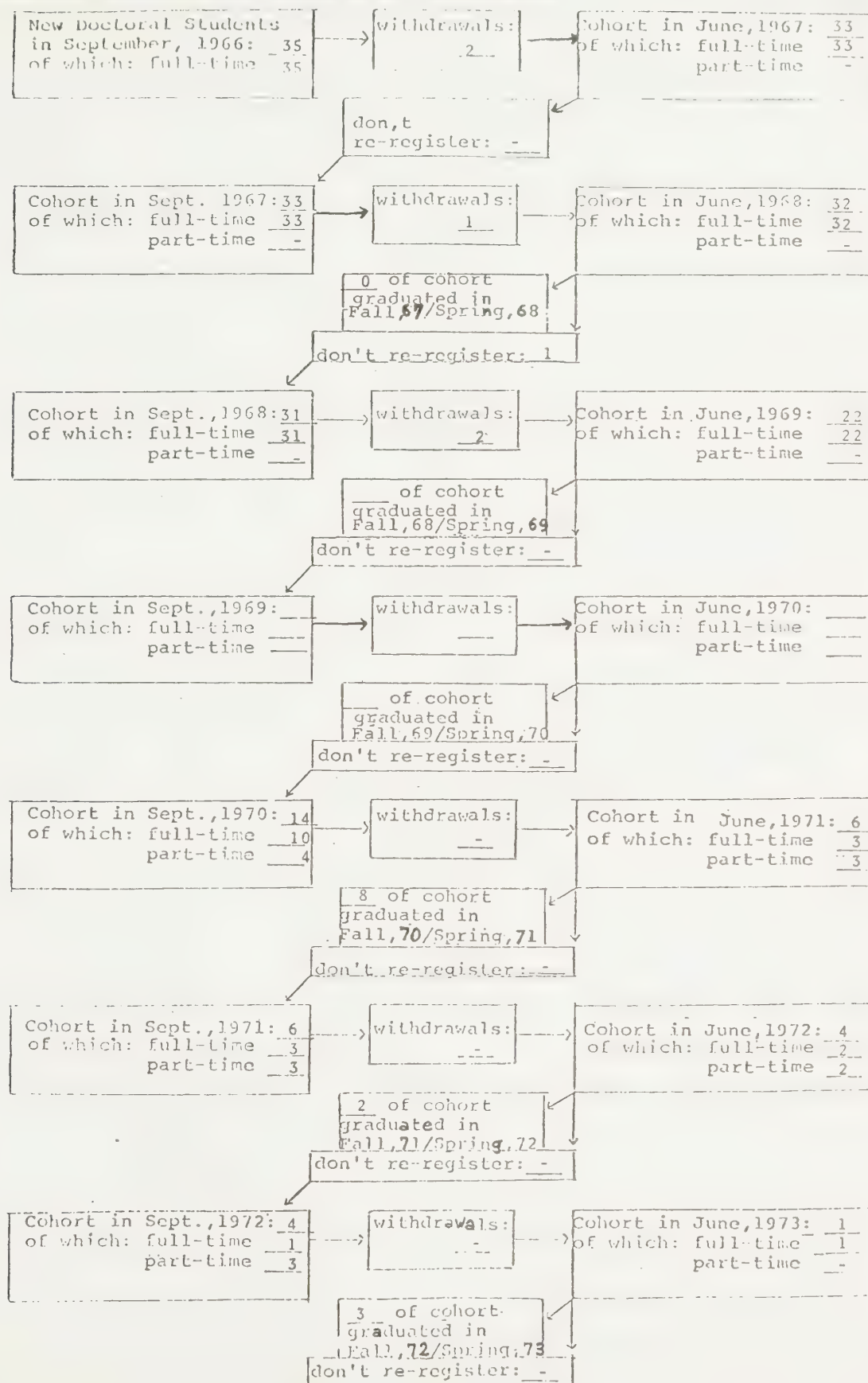
Sample discipline in Social Sciences



Sample discipline in Social Sciences



Sample discipline in Natural Sciences



APPENDIX IV

Tables IV, 1-21

Appendix IV, 1

TOTAL UNIVERSITIES

FULL-TIME FACULTY

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION / AVERAGE PERCENTAGES

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND DEGREE

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND DEGREE												
D E G R E E	Employment category											
	Dir. (Teaching/Research)		Dir. (Other functions)		Professor/ Researcher		Assist. (Teach./ Research)		Professional Technicians		TOTAL	
	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75	1973-74	1974-75
Undergraduate	83.27	84.40	280.63	270.40	716.22	797.51	162.85	112.61	1 064.02	1 030.12	2 306.99	2 345.03
	11.33		62.20		14.32		45.96		75.06		28.37	
Master's Studies	220.97	208.96	137.47	131.85	1 526.47	1 618.35	101.14	83.47	309.23	311.42	2 295.27	2 354.05
	29.04		30.40		29.74		30.80		21.73		28.35	
Doctoral Studies	439.55	443.32	33.20	32.35	2 955.26	2 958.91	81.49	57.84	42.06	49.76	3 551.54	3 542.17
	59.63		7.40		55.94		23.24		3.21		43.27	
TOTAL	743.77	736.68	451.29	434.60	5 197.95	5 374.76	345.48	253.92	1 415.31	1 441.30	8 153.80	8 241.25
	100.00		100.00		100.00		100.00		100.00		100.00	

SOURCE : Government of Quebec, Department of Education, Directorate of Higher Education, 1973-74, 1974-75

Appendix IV, 1 (continued)

LAVAL UNIVERSITY

FULL-TIME FACULTY

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION / AVERAGE PERCENTAGES

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND DEGREE

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND DEGREE													
D E G R E E	Employment category												
	Dir. (Teaching/ Research)		Dir. (Other functions)		Professor/ Researcher		Assist. (Teach./ Research)		Professional Technicians		TOTAL		
	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75	1973-74	1974-75	
Undergraduate	30.08	31.84	23.11	22.17	232.85	239.46	22.22	11.25	232.62	253.18	542.50	557.89	
	22.21		84.98		22.79		56.33		86.55		36.52		
Masters' Studies	33.35	30.00	2.00	2.00	244.74	244.91	9.44	6.00	31.73	29.90	321.56	312.82	
	22.73		7.51		23.62		25.99		10.98		55.96		
Doctoral Studies	78.33	75.17	2.00	2.00	546.35	564.39	6.50	4.00	6.04	7.83	629.52	653.39	
	55.06		7.51		53.59		17.67		2.47		42.72		
TOTAL	141.77	137.00	27.11	26.17	1 023.57	1 048.75	38.16	21.25	270.39	290.91	1 501.40	1 524.09	
	100.00		100.00		100.00		100.00		100.00		100.00	100.00	

UNIVERSITE DE MONTREAL /

FULL-TIME FACULTY

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION/ AVERAGE PERCENTAGES

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND DEGREE

D E G R E E	Employment category													
	Dir. (Teaching/ Research)				Dir. (Other functions)				Professor/ Researcher		Assist. (Teach./ Research)		Professional Technicians	
	1973-74	1974-75	1972-73	1974-75	1972-73	1974-75	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75	1973-74	1974-75
	TOTAL													
Undergraduate	Full-time equivalent Faculty	13.00	12.17	37.54	31.35	104.40	123.73			7.43	8.48	290.11	271.59	
	% Average / Total	11.92		55.51		10.91				40.93		75.16		
Masters' Studies	Full-time equivalent Faculty	25.50	25.70	20.50	17.40	251.40	205.54			9.21	9.33	69.78	67.49	
	% Average / Total	24.25		30.53		24.73				47.70		18.37		
Doctoral Studies	Full-Time equivalent Faculty	64.72	70.10	8.33	9.00	665.22	680.46			1.42	3.00	22.55	25.80	
	% Average / Total	63.84		13.96		64.36				11.37		6.47		
TOTAL	Full-Time equivalent Faculty	103.22	107.97	66.37	57.77	1 021.03	1 069.73			18.05	20.82	382.44	364.88	
	% Average / Total	100.00		100.00		100.00				100.00		100.00		

Appendix IV, 1 (continued)

ÉCOLE DES HAUTES ÉTUDES COMMERCIALES

FULL-TIME FACULTY

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION / AVERAGE PERCENTAGES

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND DEGREE

D E G R E E		Employment category											TOTAL	
		Dir. (Teaching/Research)		Dir. (Other functions)		Professor/Researcher		Assist. (Teach./Research)		Professional Technicians				
		1973-74	1974-75	1972-73	1974-75	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75			
Undergraduate	Full-time equivalent Faculty	0.0	0.0	5.00	5.47	0.90	4.83	11.43	11.03	15.92	11.13	33.24	32.45	
	% Average / Total	0.0		25.45		4.03		71.69		65.81		23.95		
Masters' Studies	Full-Time equivalent Faculty	4.05	4.59	14.79	14.25	46.00	54.37	4.59	4.28	5.87	6.18	75.3	82.72	
	% Average / Total	46.59		70.71		70.57		28.31		29.33		57.95		
Doctoral Studies	Full-Time equivalent Faculty	5.00	4.91	1.00	0.58	18.95	17.18	0.0	0.0	1.00	1.00	25.95	23.66	
	% Average / Total	53.41		3.33		25.40		0.0		4.87		18.09		
TOTAL	Full-Time equivalent Faculty	9.05	9.50	20.79	20.33	65.85	76.39	16.01	15.31	22.79	18.31	154.50	139.84	
	% Average / Total	100.00		100.00		100.00		100.00		100.00		100.00		

FULL-TIME FACULTY

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FULL-TIME EQUIVALENT FACULTY DISTRIBUTION / AVERAGE PERCENTAGES

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND DEGREE

[illegible]

Appendix IV, 1 (continued)

UNIVERSITÉ DE SHERBROOKE

FULL-TIME FACULTY

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION/ AVERAGE PERCENTAGES

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND DEGREE

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND DEGREE												
D E G R E E	Employment category											
	Dir. (Teaching/ Research)		Dir. (Other functions)		Professor/ Researcher		Assist. (Teach./ Research)		Professional Technicians		TOTAL	
	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75	1973-74	1974-75
Undergraduate	8.00	7.96	18.31	18.85	82.00	91.72	11.49	3.16	63.05	60.17	182.85	181.86
	9.71		54.98		19.16		46.62		76.72		27.41	
Masters' Studies	25.15	26.00	12.44	12.00	140.85	136.13	5.45	1.64	17.41	17.99	201.30	192.75
	31.13		36.16		30.54		22.55		22.04		29.69	
Doctoral Studies	48.33	48.88	2.99	3.00	233.75	222.35	7.21	2.48	1.00	1.00	293.28	277.71
	59.16		8.86		50.30		30.83		1.25		42.91	
TOTAL	81.48	82.84	33.73	33.85	456.61	450.20	24.15	7.28	81.46	79.16	677.42	656.32
	100.00		100.00		100.00		100.00		100.00		100.00	

Appendix IV, 1 (continued)

UNIVERSITÉ DU QUÉBEC

FULL-TIME FACULTY

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION / AVERAGE PERCENTAGES

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND DEGREE

D E G R E E	Employment category										TOTAL	
	Dir. (Teaching/ Research)		Dir. (Other functions)		Professor/ Researcher		Assist. (Teach./ Research)		Professional Technicians		1973-74	1974-75
	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75		
Undergraduate	12.19	12.55	116.52	115.33	105.84	136.44	51.45	46.53	273.89	292.15	559.89	603.00
	7.13		64.93		15.00		51.84		83.13		36.46	
Masters' Studies	79.40	67.11	48.86	48.74	316.80	367.64	35.30	28.34	46.52	49.93	526.88	561.81
	42.22		27.32		42.37		33.67		14.17		34.13	
Doctoral Studies	90.08	85.65	13.97	13.73	330.33	358.51	14.11	13.28	8.25	10.13	456.64	481.30
	50.65		7.73		42.64		14.49		2.70		29.41	
TOTAL	181.67	165.31	179.25	177.80	752.97	862.60	100.86	88.14	328.67	352.25	1 543.42	1 646.10
	100.00		100.00		100.00		100.00		100.00		100.00	

Appendix IV, 1 (continued)

MC GILL UNIVERSITY

FULL-TIME FACULTY

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION / AVERAGE PERCENTAGES

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND DEGREE

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND DEGREE												
D E G R E E	Employment category											
	Dir. (Teaching/ Research)		Dir. (Other functions)		Professor/ Researcher		Assist. (Teach./ Research)		Professional Technicians		TOTAL	
	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75	1973-74	1974-75
Undergraduate	14.00	14.00	22.29	23.22	127.35	139.71	47.00	24.33	123.77	125.49	324.42	326.75
	9.55		60.20		11.52		35.53		58.20		19.93	
Masters' Studies	31.52	32.55	12.37	12.67	261.01	295.90	27.83	27.00	86.40	88.37	419.13	456.49
	21.86		33.13		24.01		27.31		40.81		26.40	
Doctoral Studies	100.45	100.61	3.00	2.04	768.26	726.84	44.57	29.96	1.25	3.00	517.62	862.45
	68.59		6.67		64.47		37.17		0.99		53.67	
TOTAL	145.96	147.16	37.67	37.93	1 156.62	1 162.44	119.50	81.30	211.42	216.87	1 671.17	1 645.69
	100.00		100.00		100.00		100.00		100.00		100.00	

Appendix IV, 1 (continued)

BISHOP'S UNIVERSITY

FULL-TIME FACULTY

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION / AVERAGE PERCENTAGES
BY EMPLOYMENT CATEGORY, FISCAL YEAR AND DEGREE

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND DEGREE													
D E G R E E	Employment category												
	Dir. (Teaching/Research)		Dir. (Other functions)		Professor/Researcher		Assist. (Teach./Research)		Professional Technicians				
	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75	1973-74	1974-75	
Undergraduate	0,0	0,0	4,00	4,00	2,00	3,00	0,0	0,0	0,0	1,00	6,00	8,00	
	0,0		66,67		4,00		0,0		25,00		9,25		
Masters' Studies	1,00	0,0	2,00	2,00	29,00	32,00	0,0	0,0	2,00	1,00	34,00	35,00	
	9,09		33,33		49,09		0,0		75,00		45,62		
Doctoral Studies	5,00	5,00	0,0	0,0	29,00	29,25	0,0	0,0	0,0	0,0	34,00	34,25	
	90,91		0,0		46,88		0,0		0,0		45,12		
TOTAL	6,00	5,00	6,00	6,00	60,00	64,25	0,0	0,0	2,00	2,00	74,00	77,25	
	100,00		100,00		100,00		0,0		100,00		100,00		

Appendix IV, 1 (continued)

CONCORDIA UNIVERSITY

FULL-TIME FACULTY

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION / AVERAGE PERCENTAGES

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND DEGREE

D E G R E E	Employment category												
	Dir. (Teaching/ Research)		Dir. (Other functions)		Professor/ Researcher		Assist. (Teach./ Research)		Professional Technicians		TOTAL		
	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75	1972-73	1974-75	1973-74	1974-75	1973-74	1974-75	
Undergraduate	3.00	2.80	49.86	47.00	39.69	39.00	6.67	3.67	54.65	54.63	153.87	147.19	
	4.44		66.13		7.88		40.13		54.79		20.04		
Master's Studies	18.00	20.00	23.51	22.00	176.92	162.44	6.00	4.00	42.89	45.28	267.32	253.72	
	28.66		31.09		34.00		36.84		44.21		34.63		
Doctoral Studies	41.63	47.00	2.00	2.00	295.45	286.59	3.75	1.67	1.00	1.00	341.88	335.25	
	66.89		2.73		58.11		21.04		1.00		45.27		
TOTAL	62.63	69.89	75.36	71.00	510.05	488.03	16.42	9.33	98.54	100.91	733.06	739.16	
	100.00		100.00		100.00		100.00		100.00		100.00		

Appendix IV, 2

TOTAL UNIVERSITIES

FULL-TIME EMPLOYMENT STATUS

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION/AVERAGE PERCENTAGES

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND CITIZENSHIP

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CITIZENSHIP	Employment category											TOTAL	
	Dir. (Teaching/ Research)		Dir. (Other functions)		Professor/ Researcher		Assist. (Teaching/ Research)		Professional Technicians				
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	
CANADIAN	647.33	642.94	376.40	371.32	3794.78	3949.47	181.09	138.91	1105.41	1124.20	6 105.62	6 226.84	77.88
	87.27		94.92		73.75		55.48		89.53				
OTHER	93.44	92.74	22.46	17.54	1370.21	1386.86	150.64	106.17	121.35	139.40	1 760.10	1 742.71	22.12
	12.73		5.08		26.25		44.52		10.47				
SUB-TOTAL ANSWER	742.77	735.68	398.86	388.86	5164.99	5336.33	331.73	245.08	1226.76	1263.60	7 865.12	7 969.55	
SUB-TOTAL NO-ANSWER	1.00	1.00	52.44	45.73	32.96	38.42	13.75	8.83	188.54	177.70	288.68	271.70	
TOTAL	743.77	736.68	451.29	434.60	5197.95	5374.76	345.48	253.92	1415.31	1441.30	8 153.80	8 241.25	

Appendix IV, 2 (continued)

LAVAL UNIVERSITY

FULL-TIME EMPLOYMENT STATUS

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION/AVERAGE PERCENTAGES
BY EMPLOYMENT CATEGORY, FISCAL YEAR AND CITIZENSHIP

CITIZENSHIP	Employment category												TOTAL	
	Dir. (Teaching/ Research)		Dir. (Other functions)		Professor/ Researcher		Assist. (Teaching/ Research)		Professional Technicians					
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75				
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75				
CANADIAN	133.77	129.00	25.84	24.17	847.40	882.56	21.12	16.00	239.06	247.74	1 267.18	1 299 47		
	94.26		96.15		83.54		67.30		97.94		36.90			
OTHER	8.00	8.00	1.00	1.00	175.57	165.21	14.04	4.00	6.22	4.00	204.84	182.21		
	5.74		3.85		16.46		32.70		2.06		13.10			
SUB-TOTAL ANSWER	141.77	137.00	26.84	25.17	1 022.97	1 047.77	35.16	20.00	245.26	251.74	1 472.02	1 481.68		
SUB-TOTAL NO-ANSWER	0.0	0.0	0.27	1.00	1.00	1.00	3.00	1.25	25.11	39.17	29.38	42.42		
TOTAL	141.77	137.00	27.11	26.17	1 023.97	1 048.76	38.16	21.25	270.39	290.91	1 501.40	1 524.09		

Appendix IV, 2 (continued)

UNIVERSITÉ DE MONTREAL

FULL-TIME EMPLOYMENT STATUS

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION/AVERAGE PERCENTAGES
BY EMPLOYMENT CATEGORY, FISCAL YEAR AND CITIZENSHIP

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CITIZENSHIP	Employment category												TOTAL	
	Dir. (Teaching/ Research)		Dir. (Other functions)		Professor/ Researcher		Assist. (Teaching/ Research)		Professional Technicians					
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75				
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75				
CANADIAN	95.89	100.97	15.96	14.54	746.81	787.00	3.37	8.32	220.66	216.43	1 082.70	1 127.26		
	93.21		98.35		73.70		30.07		89.45		77.52			
OTHER	7.33	7.00	0.0	0.50	269.60	277.73	14.68	12.50	19.62	31.92	311.23	329.65		
	6.79		1.61		26.30		69.93		10.55		22.43			
SUB-TOTAL ANSWER	103.22	107.97	15.96	15.04	1 016.41	1 064.73	18.05	20.82	240.28	248.35	1 393.93	1 456.91		
SUB-TOTAL NO-ANSWER	0.0	0.0	50.42	42.73	4.62	5.00	0.0	0.0	142.15	116.54	197.19	164.27		
TOTAL	103.22	107.97	66.37	57.77	1 021.03	1 069.73	18.05	20.82	382.44	364.88	1 591.12	1 621.18		

Appendix IV, 2 (continued)

ECOLE DES HAUTES ETUDES COMMERCIALES

FULL-TIME EMPLOYMENT STATUS

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION/AVERAGE PERCENTAGES
BY EMPLOYMENT CATEGORY, FISCAL YEAR AND CITIZENSHIP

CITIZENSHIP	Employment category												TOTAL	
	Dir. (Teaching/ Research)		Dir. (Other functions)		Professor/ Researcher		Assist. (Teaching/ Research)		Professional Technicians					
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75		
CANADIAN	9.05	9.50	19.38	19.33	56.69	65.41	11.43	9.62	21.60	18.31	118.15	122.18		
	100.00		94.14		85.85		67.19		97.10		87.60			
OTHER	0.0	0.0	1.41	1.00	9.16	10.97	4.59	5.69	1.19	0.0	16.35	17.66		
	0.0		5.86		14.15		32.81		2.90		12.40			
SUB-TOTAL ANSWER	9.05	9.50	20.79	20.33	65.85	76.38	16.02	15.31	22.79	18.31	134.50	139.84		
SUB-TOTAL NO-ANSWER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
TOTAL	9.05	9.50	20.79	20.33	65.85	76.39	16.01	15.31	22.79	18.31	134.50	139.84		

CANADIAN	Full-Time equivalent Faculty	
	% Average / Sub-total answer	
OTHER	Full-Time equivalent Faculty	
	% Average / Sub-total answer	
SUB-TOTAL ANSWER	Full-Time equivalent Faculty	
SUB-TOTAL NO-ANSWER	Full-Time equivalent Faculty	
TOTAL	Full-Time equivalent Faculty	

Appendix IV, 2 (continued)

ECOLE POLYTECHNIQUE

FULL-TIME EMPLOYMENT STATUS

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION/AVERAGE PERCENTAGES
BY EMPLOYMENT CATEGORY, FISCAL YEAR AND CITIZENSHIP

CITIZENSHIP	Employment category												TOTAL	
	Dir. (Teaching/ Research)		Dir. (Other functions)		Professor/ Researcher		Assist. (Teaching/ Research)		Professional Technicians					
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75		
													1973-74	1974-75
CANADIAN	11.94	12.00	5.00	3.75	120.43	122.60	0.0	0.0	17.48	16.01	154.86	154.36		
	100.00		100.00		80.16		0.0		99.64		78.82			
OTHER	0.0	0.0	0.0	0.0	30.41	29.76	12.33	10.49	0.12	0.0	42.85	40.25		
	0.0		0.0		19.84		100.00		0.36		21.18			
SUB-TOTAL ANSWER	11.94	12.00	5.00	3.75	150.84	152.36	12.33	10.49	17.60	16.01	197.71	194.61		
SUB-TOTAL NO-ANSWER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
TOTAL	11.94	12.00	5.00	3.75	150.84	152.36	12.33	10.49	17.60	16.01	197.71	194.61		

Appendix IV, 2 (continued)

UNIVERSITÉ DE SHERBROOKE

FULL-TIME EMPLOYMENT STATUS

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION/AVERAGE PERCENTAGES
BY EMPLOY. ENT CATEGORY, FISCAL YEAR AND CITIZENSHIP

EMPLOYMENT CATEGORY	EMPLOYMENT CATEGORY										TOTAL	
	Dir. (Teaching/Research)		Dir. (Other functions)		Professor/Researcher		Assist. (Teaching/Research)					
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75
FACULTY	72.48	72.94	33.73	33.35	343.93	344.93	1.33	0.75	77.46	75.16	528.93	527.62
	88.50		100.00		75.96		6.62		95.02		70.40	
STAFF	9.00	9.90	0.0	0.0	112.68	105.28	22.82	6.52	4.00	4.00	148.49	125.70
	11.50		0.0		24.04		93.30		4.93		20.80	
SUB-TOTAL FACULTY	81.48	82.84	33.73	33.85	456.61	450.21	24.15	7.27	81.46	79.16	577.42	553.32
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	81.48	82.84	33.73	33.85	456.61	450.20	24.15	7.28	81.46	79.16	577.42	553.32

Appendix IV, 2 (continued)

UNIVERSITÉ DU QUÉBEC

FULL-TIME EMPLOYMENT STATUS

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION/AVERAGE PERCENTAGES
BY EMPLOYMENT CATEGORY, FISCAL YEAR AND CITIZENSHIP

CITIZENSHIP	Employment category										TOTAL	
	Dir. (Teaching/ Research)		Dir. (Other functions)		Professor/ Researcher		Assist. (Teaching/ Research)		Professional Technicians		1973-74	1974-75
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75		
CANADIAN	156.48	144.94	173.12	174.80	606.29	688.77	64.76	55.85	302.95	328.62	1 303.60	1 392.98
	87.37		97.44		80.20		64.27		92.75		84.65	
OTHER	24.19	19.37	6.13	3.00	145.93	173.83	35.35	31.71	25.72	23.63	237.32	251.54
	12.63		2.56		19.80		35.73		7.25		15.35	
SUB-TOTAL ANSWER	180.67	164.31	179.25	177.80	752.22	862.60	100.11	87.56	328.67	352.25	1 540.92	1 644.52
SUR-TOTAL NO-ANSWER	1.00	1.00	0.0	0.0	0.75	0.0	0.75	0.58	0.0	0.0	2.50	1.58
TOTAL	181.67	165.31	179.25	177.80	752.97	862.60	100.86	88.14	328.67	352.25	1 543.42	1 646.10

Appendix IV, 2 (continued)

MC GILL UNIVERSITY

FULL-TIME EMPLOYMENT STATUS

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION/AVERAGE PERCENTAGES

BY EMPLOYMENT CATEGORY, FISCAL YEAR AND CITIZENSHIP

CITIZENSHIP	Employment category											TOTAL		
	Dir. (Teaching/ Research)		Dir. (Other functions)		Professor/ Researcher		Assist. (Teaching/ Research)		Professional Technicians					
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75
CANADIAN	118.71	118.69	31.75	32.88	702.25	706.90	66.67	42.30	145.77	142.60	1 065.16	1 043.38		
	80.99		85.50		62.02		59.29		71.01		65.27			
OTHER	27.25	28.48	5.92	5.04	435.79	427.11	42.83	32.00	54.48	63.26	566.27	555.89		
	19.01		14.50		37.98		40.71		28.99		34.73			
SUB-TOTAL ANSWER	145.96	147.17	37.67	37.92	1138.04	1134.01	109.50	74.30	200.25	205.86	1 631.43	1 599.27		
SUB-TOTAL NO-ANSWER	0.0	0.0	0.0	0.0	18.58	28.42	10.00	7.00	11.17	11.00	39.75	46.42		
TOTAL	145.96	147.16	37.67	37.93	1156.62	1162.44	119.50	81.30	211.42	216.87	1 671.17	1 645.69		

BISHOP'S UNIVERSITY

Full-time employment status

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION/AVERAGE PERCENTAGES
BY EMPLOYMENT CATEGORY, FISCAL YEAR AND CITIZENSHIP

CITIZENSHIP		Employment category												TOTAL
		Dir. (Teaching/Research)				Dir. (Other functions)		Professor/Researcher		Assist. (Teaching/Research)		Professional Technicians		
		1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	
CANADIAN	Full-Time equivalent Faculty	4.00	4.00	5.00	5.00	44.00	45.25	0.0	0.0	2.00	1.00	55.00	55.25	
	% Average / Sub-total answer	72.73		83.33		71.83		0.0		75.00		72.89		
OTHER	Full-Time equivalent Faculty	2.00	1.00	1.00	1.00	16.00	19.00	0.0	0.0	0.0	1.00	19.00	22.00	
	% Average / Sub-total answer	27.27		16.67		28.17		0.0		25.00		27.11		
SUB-TOTAL ANSWER	Full-Time equivalent Faculty	6.00	5.00	6.00	6.00	60.00	64.25	0.0	0.0	2.00	2.00	74.00	77.25	
SUB-TOTAL NO-ANSWER	Full-Time equivalent Faculty	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TOTAL	Full-Time equivalent Faculty	6.00	5.00	6.00	6.00	60.00	64.25	0.0	0.0	2.00	2.00	74.00	77.25	

Appendix IV, 2 (continued)

CONCORDIA UNIVERSITY

FULL-TIME EMPLOYMENT STATUS

FULL-TIME EQUIVALENT FACULTY DISTRIBUTION/AVERAGE PERCENTAGES
BY EMPLOYMENT CATEGORY, FISCAL YEAR AND CITIZENSHIP

CITIZENSHIP	Employment category												TOTAL	
	Dir. (Teaching/ Research)		Dir. (Other functions)		Professor/ Researcher		Assist. (Teaching/ Research)		Professional Technicians					
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75		
													1973-74	1974-75
CANADIAN	Full-Time equivalent Faculty	45.00	50.89	66.61	63.00	326.99	306.05	12.42	6.08	78.43	78.33	529.45	504.35	
	% Average / Sub-total answer	72.33		90.88		64.20		71.84		87.90		70.55		
OTHER	Full-Time equivalent Faculty	17.68	19.00	7.00	6.00	175.07	177.98	4.00	3.25	10.00	11.58	213.75	217.81	
	% Average / Sub-total answer	27.67		9.12		35.80		28.16		12.10		29.45		
SUB-TOTAL ANSWER	Full-Time equivalent Faculty	62.68	69.89	73.61	69.00	502.06	484.03	16.42	9.33	88.43	89.91	743.20	722.16	
SUB-TOTAL NO-ANSWER	Full-Time equivalent Faculty	0.0	0.0	1.75	2.00	8.00	4.00	0.0	0.0	10.11	11.00	19.86	17.00	
TOTAL	Full-Time equivalent Faculty	62.68	69.89	75.36	71.00	510.05	488.03	16.42	9.33	98.54	100.91	763.06	739.16	

Full-time undergraduate enrolment in Quebec universities, 1973-74 to 1975-76

FIELD & DISCIPLINE	1973-74			1974-75			1975-76			Fas % of T			
	ANGLOPHONE	FRANCOPHONE	TOTAL	ANGLOPHONE	FRANCOPHONE	TOTAL	ANGLOPHONE	FRANCOPHONE	TOTAL	1973-74	1974-75	1975-76	
History	219	392	611	263	904	1,167	272	899	1,171	64.2	77.5	86.2	
Modern Languages	190	89	279	203	105	308	209	116	325	31.9	34.1	35.7	
Arts	4,462	3,766	8,228	5,090	2,569	7,659	5,026	2,716	7,742	45.8	33.5	35.1	
Linguistics	27	129	156	48	271	319	50	297	347	82.7	85.0	85.1	
Philosophy	54	655	709	59	375	434	60	379	439	92.4	86.4	86.3	
Religious Studies	55	505	560	59	462	521	60	443	503	90.2	88.7	88.1	
Others	0	0	0	0	243	243	0	252	252	-	100.0	100.0	
SUB-TOTAL :	5,007	5,536	10,543	5,722	4,929	10,651	5,677	5,102	10,779	52.5	46.3	47.3	
HUMANITIES													
Social Sciences	870	2,609	3,479	999	3,344	4,343	1,033	3,472	4,505	75.0	77.0	77.1	
Administrative Studies	2,571	3,452	5,823	3,126	3,760	6,886	3,544	3,994	7,538	59.3	54.6	54.4	
Communication Studies	125	239	364	0	336	336	0	400	400	65.7	100.0	100.0	
Education	1,331	5,174	6,505	1,380	5,766	7,146	1,397	5,766	7,163	79.5	80.7	80.5	
Geography	106	802	908	179	802	981	180	823	1,003	88.5	81.8	82.1	
Interdisciplinary studies	0	431	431	0	57	57	0	65	65	100.0	100.0	100.0	
Law	489	2,162	2,651	489	2,164	2,653	474	2,285	2,759	81.6	81.6	82.3	
Psychology	608	1,093	1,701	825	1,259	2,084	837	1,231	2,068	64.3	60.4	59.5	
SUB-TOTAL :	5,900	15,962	21,862	6,998	17,488	24,486	7,265	18,034	25,299	73.0	71.4	71.3	
-SOCIAL SCIENCES	10,907	21,498	32,405	12,720	22,417	35,137	12,942	23,156	36,078	66.3	65.8	64.1	
Fine arts	1,035	1,441	2,476	1,160	1,789	2,949	1,158	1,752	2,910	58.2	60.7	60.2	
Agriculture	367	562	829	381	793	1,174	325	880	1,205	67.8	67.5	73.0	
Engineering	1,393	2,452	3,845	1,750	3,383	5,133	1,666	3,501	5,167	63.6	65.9	67.3	
Health Professions	1,389	4,035	5,424	1,426	4,381	5,807	1,480	4,573	6,053	74.4	75.4	75.5	
Pure Sciences	2,294	5,157	7,451	3,698	4,922	8,620	3,535	5,887	9,422	69.2	57.1	62.5	
SUB - TOTAL :	5,343	12,206	17,549	7,255	13,479	20,734	7,006	14,841	21,847	69.6	65.0	67.9	
NATURAL SCIENCES													
Others	0	175	175	0	185	185	0	256	256	100.0	100.0	100.0	
TOTAL	17,285	35,320	52,605	21,135	37,874	59,009	21,106	39,985	61,091	67.1	64.2	65.5	

SOURCE: Government of Quebec, Department of Education, Higher Education Branch (DIGES),

Etudiants inscrits dans les établissements universitaires 1973-74, 1974-75, 1975-76.
Etudes et information (Enrolment in Quebec Universities, 1973-74, 1974-75, 1975-76 - Studies and information).

Appendix IV, 3 (cont'd)

Part-time undergraduate enrolment in Quebec universities, 1973-74 to 1975-76

FIELD & DISCIPLINE	1973-74			1974-75			1975-76			F as % of T			
	ANGLOPHONE	FRANCOPHONE	TOTAL	ANGLOPHONE	FRANCOPHONE	TOTAL	ANGLOPHONE	FRANCOPHONE	TOTAL	1973-74	1974-75	1975-76	1975-76
History	3	337	340	5	331	336	5	411	416	99.1	98.5	98.8	98.8
Modern Languages	6	156	162	6	215	221	6	240	246	96.3	97.3	97.6	97.6
Arts	4,355	1,834	6,189	4,507	1,511	6,018	4,495	1,642	6,137	29.6	25.1	26.8	26.8
Linguistics	1	156	157	0	182	182	1	153	154	99.4	100.0	99.4	99.4
Philosophy	4	79	83	3	49	52	3	60	63	95.2	94.2	95.2	95.2
Religious Studies	6	668	674	9	602	611	8	638	646	95.1	98.5	98.8	98.8
Others	0	26	26	0	31	31	0	17	17	100.0	100.0	100.0	100.0
SUB-TOTAL :													
HUMANITIES	4,375	3,256	7,631	4,530	2,919	7,449	4,513	3,161	7,673	42.7	39.2	41.2	41.2
Social Sciences	27	438	465	20	443	463	24	558	582	94.2	55.7	95.9	95.9
Administrative Studies	1,907	5,161	7,068	1,917	6,028	7,945	1,996	6,587	8,583	73.0	75.9	76.2	76.2
Communication Studies	1	23	24	0	21	21	0	25	25	95.8	100.0	100.0	100.0
Education	324	7,673	7,997	450	8,579	9,029	426	8,940	9,366	95.9	95.2	95.5	95.5
Geography	1	468	469	0	403	403	1	446	447	99.5	100.0	99.8	99.8
Interdisciplinary													
Studies	0	34	34	0	7	7	0	17	17	100.0	100.0	100.0	100.0
Law	8	44	52	10	57	67	9	82	91	84.6	85.1	90.1	90.1
Psychology	24	235	259	12	286	298	23	294	317	90.7	96.0	92.7	92.7
SUB-TOTAL :													
-SOCIAL SCIENCES	2,292	14,076	16,368	2,389	15,824	18,213	2,479	16,749	19,228	86.0	86.9	87.1	87.1
-HUMAN SCIENCES	6,667	17,332	23,999	6,919	18,743	25,662	6,997	19,910	26,907	72.2	73.0	74.5	74.5
Pine arts	340	738	1,078	431	748	1,179	397	644	1,041	68.5	63.4	61.5	61.5
Agriculture	25	26	51	35	26	61	37	25	62	51.0	44.4	40.3	40.3
Engineering	244	602	846	250	531	781	357	304	661	71.2	68.0	46.0	46.0
Health Professions	80	437	517	60	415	484	79	476	555	84.5	85.7	72.0	72.0
Pure Sciences	1,046	1,334	2,380	976	1,055	2,071	965	1,326	2,299	63.4	52.9	57.5	57.5
SUB - TOTAL :													
NATURAL SCIENCES	1,395	2,399	3,794	1,330	2,069	3,399	1,436	2,132	3,567	63.2	60.9	59.7	59.7
Others	0	734	734	0	6,456	6,456	0	6,534	6,534	100.0	100.0	100.0	100.0
TOTAL	8,402	21,205	29,605	8,680	28,015	36,695	8,850	29,219	38,049	71.3	76.3	76.8	76.8

SOURCE: Government of Quebec, Department of Education, Higher Education Branch(DICES), Etudiants inscrits

dans les universités québécoises 1973-74, 1974-75, 1975-76, Etudes et information
(Enrolment in Quebec Universities, 1973-74, 1974-75, 1975-76 . Studies and information).

Appendix IV. 3 (cont'd)

PERCENTAGE DISTRIBUTION BY FIELD AND DISCIPLINE OF STUDY OF
UNDERGRADUATE ENROLMENT IN QUEBEC UNIVERSITIES, 1975-76

FIELD & DISCIPLINE	FULL-TIME		PART-TIME	
	ANGLOPHONE	FRANCOPHONE	ANGLOPHONE	FRANCOPHONE
History	1.3	2.2	0.1	1.4
Modern languages	1.0	0.3	0.1	0.8
Arts	23.8	6.8	50.9	5.6
Linguistics	0.2	0.7	0.0	0.5
Philosophy	0.3	0.9	0.0	0.2
Religious studies	0.3	1.1	0.1	2.2
Others	0.0	0.6	0.0	0.1
SUB-TOTAL: HUMANITIES	26.9	12.8	51.2	10.8
Social sciences	4.9	8.7	0.3	1.9
Administrative studies	15.8	10.0	22.6	21.9
Communication studies	0.0	1.0	0.0	0.1
Education	6.6	14.4	4.8	30.6
Geography	0.9	2.1	0.0	1.5
Inter-disciplinary studies	0.0	0.2	0.0	0.1
Law	2.2	5.7	0.1	0.3
Psychology	4.0	3.1	0.3	1.0
SUB-TOTAL: SOCIAL SCIENCES	34.4	45.1	28.1	57.3
SUB-TOTAL: HUMAN SCIENCES	61.3	57.9	79.2	68.1
Fine arts	5.5	4.4	4.5	2.2
Agriculture	1.5	2.2	0.4	0.1
Engineering	7.9	8.8	4.0	1.0
Health professions	7.0	11.4	0.9	1.6
Pure sciences	16.7	14.7	10.9	4.5
SUB-TOTAL: NATURAL SCIENCES	33.2	37.1	16.3	7.3
Others	0.0	0.6	0.0	22.4
TOTAL	100.0	100.0	100.0	100.0

SOURCE: Government of Quebec, Department of Education, Higher Education Branch (DIGES),
Etudiants inscrits dans les établissements universitaires québécois 1973-74, 1974-75, 1975-76
Etudes et information (Enrolment in Quebec Universities, 1973-74, 1974-75, 1975-76 studies and information).

GROWTH INDEXES, BY FIELD AND DISCIPLINE OF STUDY, OF UNDERGRADUATE ENROLMENT IN QUEBEC UNIVERSITIES, 1975-76
1973-74 = 100.0

FIELD AND DISCIPLINE	FULL-TIME		TOTAL	PART-TIME		TOTAL
	ANGLOPHONE	FRANCOPHONE		ANGLOPHONE	FRANCOPHONE	
History	124.2	229.3	191.7	166.7	122.0	122.4
Modern languages	110.0	130.3	116.5	100.0	153.8	151.9
Arts	112.6	72.1	94.1	103.2	89.5	99.2
Linguistics	185.2	230.2	222.4	100.0	98.1	98.1
Philosophy	111.1	57.9	61.9	75.0	75.9	75.9
Religious studies	109.1	87.7	89.8	133.3	95.5	95.8
Others	--	--	--	--	65.4	65.4
SUB-TOTAL: HUMANITIES	113.4	92.2	102.2	103.3	97.1	100.6
Social Sciences	113.7	133.1	129.5	88.9	127.4	125.2
Administrative Studies	141.0	115.7	126.0	104.7	123.8	118.6
Communication studies	0.0	167.4	109.9	--	108.7	104.2
Education	105.0	111.4	110.1	131.5	116.5	117.1
Geography	169.8	102.6	110.5	100.0	95.3	95.3
Inter-disciplinary studies	--	14.6	14.6	--	50.0	50.0
Law	96.9	105.7	104.1	112.5	186.4	175.0
Psychology	137.7	112.6	121.6	95.8	125.1	122.4
SUB-TOTAL: SOCIAL SCIENCES	123.1	113.0	115.7	108.2	119.0	117.5
SUB-TOTAL: HUMAN SCIENCES	118.7	107.6	111.3	104.9	114.9	112.1
Fine Arts	111.9	121.6	117.5	116.8	87.3	96.6
Agriculture	121.7	156.6	145.4	148.0	96.2	121.6
Engineering	119.6	142.8	134.4	146.3	50.5	78.1
Health professions	106.6	113.3	111.6	98.8	108.9	107.4
Pure sciences	154.1	114.2	126.5	92.1	99.4	96.2
SUB-TOTAL: NATURAL SCIENCES	131.1	121.6	124.5	102.9	88.8	94.0
Others	--	146.3	146.3	--	890.2	890.2
TOTAL	122.1	113.2	116.1	105.1	137.8	128.5

SOURCE: Government of Quebec, Department of Education, Higher Education Branch (DIGES),
Etudiants inscrits dans les établissements universitaires québécois, 1973-74, 1974-75, 1975-76,
Etudes et information. (Enrolment in Quebec Universities, 1973-74, 1974-75, 1975-76. Studies and information).

RATIO OF PART-TIME : FULL-TIME UNDERGRADUATE ENROLMENT, Quebec 1975-76

FIELD AND DISCIPLINE	ANGLOPHONE	FRANCOPHONE	TOTAL
History	0.02	0.46	0.36
Modern languages	0.03	2.07	0.76
Arts	0.89	0.60	0.79
Linguistics	0.02	0.52	0.44
Philosophy	0.05	0.16	0.14
Religious studies	0.13	1.44	1.28
Others	--	0.07	0.07
SUB-TOTAL: HUMANITIES	0.80	0.62	0.71
Social Sciences	0.02	0.16	0.13
Administrative studies	0.60	1.60	1.14
Communication studies	--	0.06	0.06
Education	0.30	1.55	1.31
Geography	0.01	0.54	0.45
Inter-disciplinary studies	--	0.27	0.27
Law	0.02	0.04	0.03
Psychology	0.03	0.24	0.15
SUB-TOTAL: SOCIAL SCIENCES	0.34	0.93	0.76
SUB-TOTAL: HUMAN SCIENCES	0.54	0.86	0.75
Fine arts	0.34	0.37	0.36
Agriculture	0.11	0.03	0.05
Engineering	0.21	0.09	0.13
Health professions	0.05	0.10	0.09
Pure sciences	0.27	0.23	0.24
SUB-TOTAL: NATURAL SCIENCES	0.20	0.14	0.16
Others	--	25.52	25.52
TOTAL	0.42	0.73	0.62

SOURCE: Government of Quebec, Department of Education ,
 Higher Education Branch (DIGES) , Etudiants inscrits dans
 les établissements universitaires québécois 1973-74, 1974-75,
 1975-76. Etudes et information . (Enrolment in Québec Universities
 1973-74, 1974-75, 1975-76 . Studies and information)

Appendix IV, 4

FULL-TIME GRADUATE AND POST-GRADUATE ENROLMENT IN QUEBEC UNIVERSITIES, 1973-74 TO 1975-76

FIELD & DISCIPLINE	1973-74			1974-75			1975-76			F as % of T		
	ANGLOPHONE	FRANCOPHONE	TOTAL	ANGLOPHONE	FRANCOPHONE	TOTAL	ANGLOPHONE	FRANCOPHONE	TOTAL	1973-74	1974-75	1975-76
History	31	48	79	25	63	86	25	62	88	60.5	73.3	70.5
Modern Languages	77	0	77	75	0	75	74	0	74	0.0	0.0	0.0
Arts	306	405	711	335	271	606	343	306	649	57.0	44.7	47.1
Linguistics	19	25	44	12	46	58	16	46	62	36.9	79.3	74.2
Philosophy	9	107	116	7	109	116	10	107	117	92.2	94.0	91.5
Religious Studies	28	145	173	21	136	157	24	127	151	83.8	86.6	84.1
Others	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
SUB-TOTAL :	470	730	1,200	468	685	1,153	493	713	1,206	60.9	59.4	59.1
HUMANITIES												
Social Sciences	167	400	567	140	478	618	154	483	637	70.5	77.3	75.8
Administrative Studies	239	498	737	142	625	765	160	695	855	67.6	81.4	81.3
Communication Studies	0	100	100	119	118	237	119	125	244	100.0	49.8	51.2
Education	344	424	768	109	476	585	133	483	623	55.2	81.4	78.3
Geography	38	63	101	45	105	150	50	113	163	62.4	70.0	69.3
Interdisciplinary studies	13	89	102	20	91	111	25	90	115	97.3	82.0	78.3
Law	32	96	128	24	120	144	26	129	155	75.0	83.3	83.2
Psychology	36	365	401	43	458	501	48	477	525	91.0	91.4	90.9
SUB-TOTAL :	869	2,035	2,904	642	2,469	3,111	717	2,600	3,317	70.1	79.4	78.4
-SOCIAL SCIENCES	1,339	2,765	4,104	1,110	3,154	4,264	1,210	3,313	4,523	67.4	74.0	73.2
-HUMAN SCIENCES												
Fine arts	48	36	84	76	43	124	78	52	130	42.9	38.7	40.0
Agriculture	31	38	69	40	34	74	47	53	100	45.2	43.5	53.0
Engineering	218	138	356	270	208	478	299	197	496	38.5	43.5	35.7
Health Professions	1,013	871	1,884	1,030	1,621	2,651	1,045	1,581	2,626	46.2	61.1	60.2
Pure Sciences	255	508	763	224	474	698	256	490	746	56.6	67.9	65.5
SUB - TOTAL :	1,517	1,555	3,072	1,564	2,337	3,901	1,649	2,321	3,970	50.6	59.9	58.5
NATURAL SCIENCES												
Others	0	50	50	0	45	45	0	56	56	100.0	100.0	100.0
TOTAL	2,904	4,406	7,310	2,750	5,584	8,334	2,937	5,742	8,679	60.3	67.0	66.2

SOURCE: Government of Quebec, Department of Education, Higher Education Branch (DIGES), Etudiants inscrits

dans les universités québécoises 1973-74, 1974-75, 1975-76. Etudes et information.
(Enrolment in Québec Universities, 1973-74, 1974-75, 1975-76, Studies and information)

Appendix IV, 5

FULL-TIME MASTER'S LEVEL ENROLMENT IN QUEBEC UNIVERSITIES, 1973-74 TO 1975-76

FIELD & DISCIPLINE	1973-74			1974-75			1975-76			F as % of T			
	ANGLOPHONE	FRANCOPHONE	TOTAL	ANGLOPHONE	FRANCOPHONE	TOTAL	ANGLOPHONE	FRANCOPHONE	TOTAL	1973-74	1974-75	1975-76	1975-76
History	18	48	66	19	52	71	20	50	70	72.7	73.2	71.4	71.4
Modern Languages	44	0	44	48	0	48	50	0	50	0.0	0.0	0.0	0.0
Arts	218	255	473	259	200	459	264	191	455	53.9	43.6	42.0	42.0
Linguistics	11	25	36	7	36	43	10	34	44	69.4	83.7	77.3	77.3
Philosophy	6	57	63	2	79	81	4	65	69	90.4	97.5	94.2	94.2
Religious Studies	16	128	144	12	129	141	14	118	132	88.9	91.5	89.4	89.4
Others	0	0	0	0	60	60	0	65	65	0.0	100.0	100.0	100.0
SUB-TOTAL : HUMANITIES	313	513	826	347	556	903	362	523	885	62.1	61.6	59.1	59.1
Social Sciences	105	328	433	83	411	494	91	410	501	75.8	83.2	81.8	81.8
Administrative Studies	235	491	726	139	614	753	155	686	841	67.6	81.5	81.6	81.6
Communication Studies	0	100	100	119	118	237	119	125	244	100.0	49.8	51.2	51.2
Education	339	357	696	104	421	525	130	418	548	51.2	80.2	76.3	76.3
Geography	22	57	79	25	97	122	27	103	130	72.2	79.5	79.2	79.2
Interdisciplinary studies	13	82	95	20	91	111	25	90	115	86.3	82.0	78.3	78.3
Law	29	86	115	20	113	133	22	122	144	74.8	85.0	84.7	84.7
Psychology	6	249	255	7	333	340	8	340	348	97.6	97.9	97.7	97.7
SUB-TOTAL : -SOCIAL SCIENCES -HUMAN SCIENCES	749	1,750	2,489	517	2,198	2,715	577	2,294	2,871	70.3	81.0	79.9	79.9
	1,062	2,263	3,315	864	2,754	3,618	939	2,817	3,756	68.3	76.1	75.0	75.0
Fine arts	48	53	101	75	46	121	77	48	125	40.7	38.0	38.4	38.4
Agriculture	26	25	51	32	32	64	37	38	75	49.0	50.0	50.7	50.7
Engineering	148	108	256	199	167	366	225	151	376	42.2	45.6	40.2	40.2
Health Professions	981	549	1,530	999	1,255	2,254	1,013	1,250	2,263	35.9	55.7	55.2	55.2
Pure Sciences	101	332	433	122	322	444	142	329	471	76.7	72.5	69.9	69.9
SUB - TOTAL : NATURAL SCIENCES	1,256	1,014	2,270	1,352	1,776	3,128	1,417	1,768	3,185	44.7	56.8	55.5	55.5
Others	0	50	50	0	43	43	0	52	52	100.0	100.0	100.0	100.0
TOTAL	2,366	3,360	5,726	2,291	4,619	6,910	2,433	4,685	7,118	58.7	66.8	65.8	65.8

SOURCE: Government of Quebec, Department of Education, Higher Education Branch (DIGES), Etudiants inscrits dans les établissements universitaires québécois 1973-1974, 1974-1975, 1975-1976. Etudes et information. (Enrolment in Quebec Universities 1973-74, 1974-75, 1975-76. Studies and information.)

Appendix IV, 6

FULL-TIME DOCTORAL STUDIES ENROLMENT IN QUEBEC UNIVERSITIES, 1973-74 TO 1975-76

FIELD & DISCIPLINE	1973-74			1974-75			1975-76			F as % of T		
	ANGLOPHONE	FRANCOPHONE	TOTAL	ANGLOPHONE	FRANCOPHONE	TOTAL	ANGLOPHONE	FRANCOPHONE	TOTAL	1973-74	1974-75	1975-76
History	13	0	13	4	11	15	6	12	18	0.0	73.3	66.7
Modern Languages	33	0	33	22	0	22	24	0	24	0.0	0.0	0.0
Arts	88	150	238	76	71	147	79	115	194	63.0	48.3	59.3
Linguistics	8	0	8	5	10	15	6	12	18	0.0	66.7	66.7
Philosophy	3	50	53	5	30	35	6	42	48	94.3	35.7	87.5
Religious Studies	12	17	29	9	7	16	10	9	19	58.6	43.8	47.4
Others	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
SUB-TOTAL : HUMANITIES	157	217	374	121	129	250	131	190	321	58.0	51.6	59.2
Social Sciences	62	72	134	57	67	124	63	73	136	53.7	54.0	53.7
Administrative Studies	4	7	11	3	9	12	5	9	14	63.6	75.0	64.3
Communication Studies	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Education	5	67	72	5	55	60	5	70	75	93.1	91.7	93.3
Geography	16	6	22	20	8	28	23	10	33	27.3	28.6	30.3
Interdisciplinary studies	0	7	7	0	0	0	0	0	0	100.0	0.0	0.0
Law	3	10	13	4	7	11	4	7	11	76.9	63.6	63.6
Psychology	30	116	146	36	125	161	40	137	177	79.5	77.6	77.4
SUB-TOTAL : -SOCIAL SCIENCES	120	285	405	125	271	396	140	306	446	70.4	68.4	68.6
-HUMAN SCIENCES	277	502	539	246	400	646	271	496	767	93.1	61.9	64.7
Fine arts	0	5	5	1	2	3	1	4	5	100.0	66.7	80.0
Agriculture	5	13	18	8	2	10	10	15	25	72.2	20.0	60.0
Engineering	70	30	100	71	41	112	74	46	120	30.0	36.6	38.3
Health Professions	32	322	354	31	366	397	32	331	363	91.0	92.2	91.2
Pure Sciences	154	176	330	102	152	254	116	161	277	53.3	59.2	58.1
SUB - TOTAL : NATURAL SCIENCES	261	541	802	212	561	773	232	553	785	67.5	72.6	70.4
Others	0	0	0	0	2	2	0	4	4	0.0	100.0	100.0
TOTAL	538	1,046	1,584	459	965	1,424	504	1,057	1,561	66.0	67.8	67.7

SOURCE: Government of Quebec, Department of Education, Higher Education Branch (DIGES), Etudiants inscrits dans les établissements universitaires québécois, 1973-1974, 1974-1975, 1975-1976. Etudes et information. (Enrolment in Quebec Universities, 1973-74, 1974-75, 1975-76. Studies and information.)

Appendix IV, 7

PERCENTAGE DISTRIBUTION BY FIELD AND DISCIPLINE OF STUDY OF GRADUATE AND POST-GRADUATE ENROLMENT

IN QUEBEC UNIVERSITIES, 1975-76

FIELD AND DISCIPLINE	Undergraduate			Post-graduate			Undergraduate and Post-graduate		
	ANGLOPHONE	FRANCOPHONE	TOTAL	ANGLOPHONE	FRANCOPHONE	TOTAL	ANGLOPHONE	FRANCOPHONE	TOTAL
History	0.8	1.1	1.0	1.2	1.1	1.2	0.9	1.1	1.0
Modern languages	2.1	0.0	0.7	4.8	0.0	1.5	2.5	0.0	0.9
Arts	10.9	4.1	6.4	15.7	10.9	12.4	11.7	5.3	7.5
Linguistics	0.4	0.7	0.6	1.2	1.1	1.2	0.5	0.8	0.7
Philosophy	0.2	1.4	1.0	1.2	4.0	3.1	0.3	1.9	1.3
Religious studies	0.6	2.5	1.9	2.0	0.9	1.2	0.8	2.2	1.7
Others	0.0	1.4	0.9	0.0	0.0	0.0	0.0	0.0	0.0
SUB-TOTAL: HUMANITIES	14.9	11.2	12.4	26.0	18.0	20.6	16.8	12.4	13.9
Social Sciences	3.7	8.8	7.0	12.5	6.9	8.7	5.2	8.4	7.3
Administrative studies	6.4	14.6	11.8	1.0	0.9	0.9	5.4	12.1	9.9
Communication studies	4.9	2.7	3.4	0.0	0.0	0.0	4.1	2.2	2.8
Education	5.3	8.9	7.7	1.0	6.6	4.8	4.6	8.5	7.2
Geography	1.1	2.2	1.8	4.6	0.9	2.1	1.7	2.0	1.9
Inter-disciplinary studies	1.0	1.9	1.6	0.0	0.0	0.0	0.9	1.6	1.3
Law	0.9	2.6	2.0	0.8	0.7	0.7	0.9	2.2	1.8
Psychology	0.3	7.3	4.9	7.9	13.0	11.3	1.6	8.3	6.0
SUB-TOTAL: SOCIAL SCIENCES	23.7	49.0	40.3	27.8	28.9	28.6	24.2	45.3	38.2
SUB-TOTAL: HUMAN SCIENCES	38.6	60.1	52.8	53.8	46.9	49.1	41.2	57.7	52.1
Fine arts	3.2	1.0	1.8	0.2	0.4	0.3	2.7	0.9	1.5
Agriculture	1.5	0.8	1.1	2.0	1.4	1.6	1.6	0.9	1.2
Engineering	9.2	3.2	5.3	14.7	4.4	7.7	10.2	3.4	5.7
Health professions	41.6	26.7	31.8	6.3	31.3	23.3	35.6	27.5	30.3
Pure sciences	5.8	7.0	6.6	23.0	15.2	17.7	8.8	8.5	8.6
SUB-TOTAL: NATURAL SCIENCES	58.2	37.7	44.7	46.0	52.3	50.3	56.1	40.4	45.7
Others	0.0	1.1	0.7	0.0	0.4	0.3	0.0	1.0	0.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE:

Government of Quebec, Department of Education, Higher Education Branch (DIGES), Etudiants inscrits dans les établissements universitaires québécois, 1973-1974, 1974-1975, 1975-1976. Etudes et information. (Enrolment in Quebec Universities, 1973-74, 1974-75, 1975-76. Studies and information.)

Appendix IV, 8

GROWTH INDEXES BY FIELD AND DISCIPLINE OF STUDY OF GRADUATE AND POST-GRADUATE ENROLMENT IN QUEBEC UNIVERSITIES, 1975-76
1973-74 = 100.0

FIELD AND DISCIPLINE	Undergraduate		TOTAL	Post-graduate		TOTAL	Undergraduate and Post-graduate		TOTAL
	ANGLOPHONE	FRANCOPHONE		ANGLOPHONE	FRANCOPHONE		ANGLOPHONE	FRANCOPHONE	
History	111.1	104.2	106.1	46.2	--	138.5	83.9	129.2	111.4
Modern languages	113.6	--	113.6	72.7	--	109.1	96.1	--	96.1
Arts	121.1	74.9	96.2	89.8	76.7	81.5	112.1	75.6	9.13
Linguistics	90.9	97.1	122.2	75.0	--	225.0	84.2	184.0	140.9
Philosophy	150.0	114.0	109.5	200.0	84.0	90.6	111.1	100.0	100.9
Religious studies	114.3	92.2	91.7	83.3	52.9	65.5	85.7	87.6	87.3
Others	--	--	--	--	--	--	--	--	--
SUB-TOTAL: HUMANITIES	115.7	101.9	107.1	83.4	87.6	85.8	104.9	97.7	100.5
Social sciences	86.7	125.0	115.7	101.6	101.4	101.5	92.2	120.8	112.3
Administrative studies	66.0	139.7	115.8	125.0	81.8	127.3	66.9	139.6	116.0
Communication studies	--	125.0	244.0	--	--	--	--	125.0	244.0
Education	38.3	117.0	78.3	100.0	104.4	104.2	39.2	115.1	81.1
Geography	122.7	180.7	164.6	143.8	166.7	150.0	131.6	179.4	161.4
Inter-disciplinary studies	192.3	109.8	121.1	--	--	--	192.6	101.1	112.7
Law	75.9	141.9	125.2	133.3	70.0	84.6	81.3	134.4	121.1
Psychology	133.3	136.5	133.3	116.7	118.1	121.2	75.0	130.7	130.9
SUB-TOTAL: SOCIAL SCIENCES	77.0	131.1	115.3	116.7	107.4	110.1	82.5	127.8	114.2
SUB-TOTAL: HUMAN SCIENCES	88.4	124.4	113.3	97.8	98.8	142.3	90.4	119.8	110.2
Fine arts	160.4	145.5	154.3	--	133.3	166.7	162.5	144.4	154.8
Agriculture	142.3	152.0	147.1	200.0	115.4	138.9	151.6	139.2	144.9
Engineering	152.0	139.8	146.9	105.7	153.3	120.0	137.2	142.8	139.3
Health professions	103.3	227.7	147.9	100.0	102.8	102.5	103.2	181.5	139.4
Pure sciences	140.6	99.1	108.8	75.3	91.5	83.9	101.2	96.5	98.0
SUB-TOTAL: NATURAL SCIENCES	112.8	174.4	140.3	88.9	102.2	97.9	108.7	149.3	129.2
Others	--	104.0	104.0	--	--	--	--	112.0	112.0
TOTAL	102.8	139.4	124.3	93.7	101.1	98.5	101.1	130.3	118.7

SOURCE: Government of Quebec, Department of Education, Higher Education Branch (DIGES), Etudiants inscrits dans les établissements universitaires québécois, 1973-74, 1974-75, 1975-76, Etudes et information. (Enrolment in Quebec Universities, 1973-74, 1974-75, 1975-76. Studies and information).

Appendix IV, 9

AGE DISTRIBUTION OF UNIVERSITY UNDERGRADUATE ENROLMENT, QUEBEC, 1975 (AUTUMN)

Age groups	Full-time		Total	Part-time		Total
	Francophone	Anglophone		Francophone	Anglophone	
From Quebec						
15 - 19	4,826	3,720	8,546	574	277	851
20 - 24	29,465	12,201	41,666	7,269	4,173	11,442
25 - 29	4,281	1,083	5,964	11,039	4,640	15,379
30 - 34	1,079	430	1,509	8,645	2,562	11,207
35 - 39	357	181	538	4,202	1,419	5,621
40 - 44	147	91	238	2,547	809	3,356
45 - 49	64	135	199	1,240	1,269	2,509
50 - 54	20	--	20	403	--	403
55 - 59	12	--	12	185	--	185
60 - 64	3	--	3	46	--	46
Others	1	--	1	15	--	15
N-D	120	87	207	832	320	1,152
Total	40,375	18,528	58,903	36,997	15,469	52,466
From outside Quebec						
15 - 19	80	1,337	1,417	4	30	34
20 - 24	979	2,595	3,574	69	195	264
25 - 29	177	520	697	56	86	142
30 - 34	52	96	148	31	23	54
35 - 39	19	21	40	20	8	28
40 - 44	6	7	13	6	13	19
45 - 49	2	18	20	6	13	19
50 - 54	2	--	2	1	--	1
55 - 59	--	--	--	2	--	2
60 - 64	--	--	--	--	--	--
N-D	14	29	43	1	14	15
Total	1,331	4,623	5,954	196	382	578

SOURCE: Gouvernement du Québec, ministère de l'Éducation, Direction générale de l'enseignement supérieur
(Government of Québec, Department of Education, Higher Education Branch)

Appendix IV, 9 (continued)
AGE DISTRIBUTION OF UNIVERSITY GRADUATE ENROLMENT, QUEBEC 1975 (AUTUMN)

Age groups	Full-time		Total	Part-time		Total
	Francophone	Anglophone		Francophone	Anglophone	
From Quebec						
15 - 19	--	--	--	--	--	--
20 - 24	1,068	651	1,719	755	443	1,198
25 - 29	2,662	1,093	3,755	2,369	1,501	3,870
30 - 34	1,047	452	1,499	1,619	842	2,461
35 - 39	275	132	407	989	417	1,406
40 - 44	93	62	155	416	266	682
45 - 49	184	59	243	136	296	432
50 - 54	11	--	11	19	--	19
55 - 59	3	--	3	11	--	11
60 - 64	1	--	1	4	--	4
Others	--	--	--	--	--	--
N-D	224	48	272	172	73	245
Total	5,568	2,497	8,065	6,490	3,838	10,328
From outside Quebec						
15 - 19	--	1	1	--	--	--
20 - 24	142	279	421	12	97	109
25 - 29	310	333	643	65	229	294
30 - 34	99	94	193	87	136	223
35 - 39	31	22	53	26	57	83
40 - 44	17	13	30	11	29	40
45 - 49	27	9	36	5	26	31
50 - 54	2	--	2	2	--	2
55 - 59	4	--	4	1	--	1
60 - 64	--	--	--	2	--	2
Others	--	--	--	--	--	--
N-D	2	11	13	1	3	4
Total	634	762	1,396	212	577	789

SOURCE: Gouvernement du Québec, Ministère de l'Éducation, Direction générale de l'enseignement supérieur.
(Government of Quebec, Department of Education, Higher Education Branch)

Appendix IV, 10

COMPARISON OF INCOME RECEIVED BY ANGLOPHONE AND FRANCOPHONE UNIVERSITIES IN QUEBEC 1973-74 AND 1974-75

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UNIVERSITY	1973-74			1974-75		
	INCOME FROM QUEBEC GOVERNMENT \$	TOTAL INCOME \$	INCOME FROM QUEBEC GOVERNMENT \$	TOTAL INCOME \$	INCOME FROM QUEBEC GOVERNMENT \$	TOTAL INCOME \$
Bishop's	1,817,000	3,730,627	2,014,000	4,181,748	2,014,000	4,181,748
Concordia	23,716,500	36,202,200	24,623,900	39,332,503	24,623,900	39,332,503
McGill	42,546,161	77,206,854	45,408,183	53,563,375	45,408,183	53,563,375
Anglophone institutions	68,081,661	117,139,681	72,051,083	127,552,017	72,051,083	127,552,017
Laval	48,244,358	77,332,412	52,904,583	86,070,176	52,904,583	86,070,176
Montréal	62,864,331	94,635,458	70,425,500	104,083,750	70,425,500	104,083,750
Québec	52,135,272	65,355,342	56,263,583	70,335,588	56,263,583	70,335,588
Francophone institutions	19,813,353	29,181,373	21,430,160	31,509,659	21,430,160	31,509,659
Francophone institutions	183,057,314	266,504,585	201,114,028	291,957,483	201,114,028	291,957,483
TOTAL	251,118,975	385,644,266	273,165,110	419,459,506	273,165,110	419,459,506

UNIVERSITY	1973-74			1974-75		
	INCOME FROM QUEBEC GOVERNMENT %	TOTAL INCOME %	INCOME FROM QUEBEC GOVERNMENT %	TOTAL INCOME %	INCOME FROM QUEBEC GOVERNMENT %	TOTAL INCOME %
Bishop's	2.7	3.2	0.7	3.3	48.7	10.8
Concordia	34.8	30.9	9.4	30.9	65.5	32.5
McGill	62.5	65.9	20.1	65.8	55.1	54.1
Anglophone institutions	100.0	100.0	30.5	100.0	58.1	56.5
Laval	26.4	29.0	19.4	29.5	62.4	61.6
Montréal	34.3	35.5	24.7	35.7	66.4	67.7
Québec	28.5	24.5	17.0	24.1	79.8	80.0
Francophone institutions	10.8	10.9	7.3	10.8	67.9	68.0
Francophone institutions	100.0	100.0	69.5	100.0	68.7	68.9
TOTAL			100.0	100.0	65.5	65.1
					8.8	9.5

SOURCE: Gouvernement du Québec, Ministère de l'éducation, Direction générale de l'enseignement supérieur, unpublished data.

(Government of Québec, Department of Education, Higher Education Branch)

Δ: Percentage change

Appendix IV, 11 (a)

FEDERAL RESEARCH GRANTS TO UNIVERSITIES : DISTRIBUTION
BY PROVINCE AND BY SECTOR 1), 1972-1973

SECTORS	TOTAL GRANTS ALLOCATED (\$)			PERCENTAGE, BY SECTOR, OF TOTAL GRANTS ALLOCATED TO INSTITUTIONS OF			GRANTS TO QUEBEC AND ONTARIO COMPARED TO CANADA		QUEBEC COMPARED TO ONTARIO
	QUEBEC	ONTARIO	CANADA	QUEBEC	ONTARIO	CANADA	QUEBEC	ONTARIO	
National Research Council	10,290,731	23,306,178	52,299,162	40.2	56.9	51.5	19.7	44.6	.44
Health sector 2)	11,332,319	11,176,086	32,217,264	44.3	27.3	31.7	35.2	34.7	1.01
Economic sector 3)	1,546,459	2,713,224	8,078,793	6.0	6.6	8.0	19.1	33.6	.57
Administrative sector 4)	461,332	624,422	1,821,434	1.8	1.5	1.8	25.3	34.3	.74
Canada Council	1,290,680	1,820,667	4,213,182	5.1	4.4	4.2	30.6	43.2	.71
Defence Research Board	660,300	1,346,500	2,853,100	2.6	3.3	2.8	23.1	47.2	.49
TOTAL	25,581,821	40,987,077	101,482,935	100.00	100.00	100.00	25.2	40.4	.62

1) From the Directory of Federally-Supported Research in the Universities - 1972-73. Canadian Institute for Scientific and Technical Information, National Research Council, 1973.

2) Includes grants from Medical Research Council and Health and Welfare Canada.

3) Includes economy-oriented sectors : Natural Resources, Environment, Transport, Communications, Trade and Commerce, Energy, Labour, etc.

4) Includes other sectors : Veterans Affairs, CMIC, Solicitor General, etc.

Appendix IV.11 (b)

FEDERAL RESEARCH GRANTS TO QUEBEC UNIVERSITIES . DISTRIBUTION

BY SECTOR 1) 1972-1973

Sectors	Grants allocated (\$)			Percentage , by sector, of total grants allocated to			Grants to Quebec Francophone and Anglophone Institutions compared to total Quebec Institutions		Francophone Institutions compared to Anglophone Institutions
	Francophone	Anglophone	Total	Institutions Franco. Anglo.	All Institutions	%	Francophone	Anglophone	
National Research Council	6,608,190	3,682,541	10,290,731	42.9	36.1	40.2	64.2	35.8	1.79
Health Sector 2)	6,073,111	5,259,208	11,332,319	39.5	51.6	44.3	53.6	46.4	1.16
Economic and Administrative Sectors 3)	1,371,651	636,140	2,007,791	8.9	6.2	7.8	68.3	31.7	2.16
Canada Council	1,033,441	257,239	1,290,680	6.7	2.5	5.1	80.1	19.9	4.02
Defence Research Board	296,200	364,100	660,300	1.9	3.6	2.6	44.8	55.2	.81
TOTAL	15,382,593	10,199,228	25,581,821	100.00	100.00	100.00	60.1	39.9	1.50

1) From the Directory of Federally-Supported Research in the Universities - 1972-73. Canadian Institute for Scientific and Technical Information, National Research Council, 1973.

2) Includes grants from Medical Research Council and Health and Welfare Canada .

3) All other Departments and Agencies reported in the Directory .

Appendix IV.12

COMPARISON OF FEDERAL RESEARCH FUNDING TO TOP 10 CANADIAN UNIVERSITIES, BY UNIVERSITY, BY GRANTING COUNCIL, 1974†† (\$'000's)

SET OF TABLES :

UNIVERSITY	NRC† (a) TOP 10	NRC (b) TOP 10	CC† (c) TOP 10	TOTAL (amounts a, b, c)	3		
					NRC (a)	NRC (b)	CC (c)
1 Toronto	6,889.2	5,563.6	516.4	12,969.2	11.9	18.1	11.0
2 McGill	3,331.0	4,970.0	215.2	8,516.2	5.8	16.2	4.6
3 British Columbia	5,336.0	1,906.4	257.0	7,549.4	9.3	6.2	5.5
4 Montreal*	2,599.5	3,656.9	363.3	6,236.4	4.5	11.8	7.7
5 Alberta	3,785.7	1,842.3	181.9	5,809.9	6.6	6.0	3.9
6 McMaster	3,619.4	1,609.8	-	5,229.2	6.3	5.2	-
7 Manitoba /	2,192.4	2,395.4	-	4,587.8	3.8	7.8	-
8 Western Ontario	2,461.5	1,482.6	-	3,944.1	4.3	4.8	-
9 Waterloo	5,297.1	-	159.9	5,457.0	5.7	-	3.4
10 Laval	2,442.7	-	710.2	3,152.9	4.2	-	15.1
11 Queen's	-	1,223.9	-	1,223.9	-	4.0	-
12 Ottawa	-	1,117.8	-	1,117.8	-	3.6	-
13 Quebec	-	-	287.2	287.2	-	-	6.1
14 Windsor	-	-	197.7	197.7	-	-	4.2
15 York	-	-	181.8	181.8	-	-	3.9
SUB-TOTAL	36,004.5	25,743.7	3,070.6	64,819.0	62.3	83.7	65.3
TOTAL	57,755.3	30,765.9	4,699.6	93,220.8	100.0	100.0	100.0

5					5		
NRC	MRC	CC	TOTAL		NRC	MRC	TOTAL
53.1	42.9	4.0	100.0		53.1	42.9	100.0
39.1	58.4	2.5	100.0		39.1	58.4	100.0
71.3	25.3	3.4	100.0		71.3	25.3	100.0
41.7	58.3	5.8	100.0		41.7	58.3	100.0
65.2	31.7	3.1	100.0		65.2	31.7	100.0
69.2	30.8	-	100.0		69.2	30.8	100.0
47.8	52.2	-	100.0		47.8	52.2	100.0
62.4	37.6	-	100.0		62.4	37.6	100.0
95.4	-	4.6	100.0		95.4	-	100.0
80.0	-	23.3	100.0		80.0	-	100.0
-	100.0	-	100.0		-	100.0	100.0
-	100.0	-	100.0		-	100.0	100.0
-	-	100.0	100.0		-	-	100.0
-	-	100.0	100.0		-	-	100.0
-	-	100.0	100.0		-	-	100.0
55.5	39.7	4.7	100.0		55.5	39.7	100.0
62.0	35.0	5.0	100.0		62.0	35.0	100.0

†† Amounts are included only for universities when they are in the "top 10"; blanks indicate that the universities were not in the "top 10" and not that they did not necessarily receive fundings.

† Excludes private scholars

* Does not include Ecole Polytechnique

(a) For definition of research funding, see source p. 94

(b) For definition of research funding, see source p. 94

(c) For definition of research funding, see source p. 97

SOURCE: Statistics Canada, 1975, Federal Scientific Resources 1973-75, Natural and Human Sciences.

* RANKING OF CANADIAN UNIVERSITIES RECEIVING RESEARCH FUNDS FROM FEDERAL GRANTING COUNCILS, 1974

RANK	SOURCES OF FUNDING				SCORING WEIGHT
	NRC	MRC	CC		
1	Toronto	Toronto	Laval		10
2	British Columbia	McGill	Toronto		9
3	Alberta	Montreal	Montreal		8
4	McMaster	Manitoba	Quebec		7
5	McGill	British Columbia	British Columbia		6
6	Waterloo	Alberta	McGill		5
7	Montreal	McMaster	Windsor		4
8	Western Ontario	Western Ontario	Alberta		3
9	Laval	Queen's	York		2
10	Manitoba	Ottawa	Waterloo		1

UNIVERSITIES IN "TOP 10" OF GRANTING COUNCILS LISTS

THRICE		TWICE		ONCE	
Toronto	(29)	Waterloo	(6)	York	(2)
Montreal	(23)	Laval	(12)	Queen's	(2)
McGill	(20)	Western Ontario	(6)	Windsor	(4)
British Columbia	(21)	McMaster	(11)	Ottawa	(1)
Alberta	(16)	Manitoba	(8)	Quebec	(7)

* Although depending mainly on federal funding, CC is not strictly sensu a federal agency.

UNIVERSITIES IN "TOP 10" OF GRANTING COUNCILS LISTS

THRICE		TWICE		ONCE	
Toronto		Montreal		Quebec	
British Columbia		McGill		Alberta	
				Manitoba	
				Laval	
				McMaster	

BASED ON RANK IN EACH OF THREE COLUMNS MARKED "SOURCES OF FUNDING"			RANK PLACEMENT		BASED ON FUNDS RECEIVED FROM ALL THREE GRANTING COUNCILS	
RANK	UNIVERSITY	SCORE	RANK	UNIVERSITY	RANK	UNIVERSITY
1	Toronto	(29)	1	Toronto	1	Toronto
2	Montreal	(23)	2	McGill	2	McGill
3	British Columbia	(21)	3	British Columbia	3	British Columbia
4	McGill	(20)	4	Montreal	4	Montreal
5	Alberta	(16)	5	Alberta	5	Alberta
6	Laval	(12)	6	McMaster	6	McMaster
7	McMaster	(11)	7	Manitoba	7	Manitoba
8	Manitoba	(8)	8	Western Ontario	8	Western Ontario
9	Quebec	(7)	9	Waterloo	9	Waterloo
10	Waterloo	(6)	10	Laval	10	Laval
11	Western Ontario	(4)	11	Queen's	11	Queen's
12	Windsor	(4)	12	Ottawa	12	Ottawa
13	York	(2)	13	Quebec	13	Quebec
14	Queen's	(1)	14	Windsor	14	Windsor
15	Ottawa	(1)	15	York	15	York

Does not include Ecole Polytechnique

Score is determined by summing the rank score from each of the three columns under "source of funding" [i.e.] (scoring weight x column rank), with maximum of 30 points possible for any one university].

SOURCE: Ministry of State for Science & Technology, Federal Scientific Resources 1973-75, Natural and Human Sciences.

Appendix IV, 12 (continued)

COMPARISON OF NATIONAL RESEARCH COUNCIL FUNDING FOR RESEARCH TO "TOP 10" CANADIAN UNIVERSITIES, 1972 & 1974

RANKING IN 1972				1972 RANKING COMPARED TO 1974 RANKING			
RANK	UNIVERSITY	\$'000's	COLUMN %	RANK OF 1972's "TOP 10"	RANK OF 1974's "TOP 10"	UNIVERSITY	COLUMN %
1	Toronto	7,166.3	43.0	1	1	Toronto	11.9
2	British Columbia	4,971.5	30.0	2	2	British Columbia	9.3
3	Alberta	3,927.3	24.1	3	3	Alberta	6.6
4	McGill	3,697.3	22.7	3	4	McMaster	5.8
5	McMaster	3,208.7	20.0	4	5	McGill	6.3
6	Waterloo	2,813.3	17.2	6	6	Waterloo	5.8
7	Montreal*	2,522.7	15.6	7	7	Montreal*	5.7
8	Laval	2,431.7	15.0	5	8	Western Ontario	4.5
9	Manitoba	2,129.0	13.3	10	9	Laval	4.2
10	Western Ontario	1,992.9	12.3	8	10	Manitoba	3.8
SUB-TOTAL		34,971.5	215.3			SUB-TOTAL	62.3
TOTAL		55,214.6	340.0			TOTAL	100.0

*Does not include Ecole Polytechnique.

SOURCE: Ministry of State for Science and Technology, Federal Scientific Resources 1973-75, Natural and Human Sciences.

Appendix IV.12 (continued)

COMPARISON OF MEDICAL RESEARCH COUNCIL FUNDING FOR RESEARCH TO "TOP 10" CANADIAN UNIVERSITIES, 1972 & 1974

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RANKING IN 1972			
RANK	UNIVERSITY	\$000's	COLUMN %
1	McGill	4,828.1	18.2
2	Toronto	4,814.1	18.1
3	Montreal	2,547.6	9.6
4	British Columbia	1,947.5	7.3
5	Manitoba	1,809.0	6.8
6	Alberta	1,635.0	6.2
7	McMaster	1,556.0	5.2
8	Western Ontario	1,227.9	4.6
9	Queen's	1,010.9	3.8
10	Sherbrooke	914.6	3.4
SUB-TOTAL		22,114.8	83.3
TOTAL		26,563.0	100.0

1972 RANKING COMPARED TO 1974 RANKING					
RANK OF 1972's "TOP 10"			RANK OF 1974's "TOP 10"		
\$000's	RANK	COLUMN %	RANK	UNIVERSITY	\$000's
4,970.0	2	16.2	1	Toronto	5,565.6
5,563.6	1	18.1	2	McGill	4,970.0
3,636.9	3	11.8	3	Montreal	3,636.9
1,906.4	5	6.2	4	Manitoba	2,395.4
2,395.4	4	7.8	5	British Columbia	1,906.4
1,842.3	6	6.0	6	Alberta	1,842.3
1,609.8	7	5.2	7	McMaster	1,609.8
1,482.6	8	4.8	8	Western Ontario	1,482.6
1,225.9	9	4.0	9	Queen's	1,225.9
992.0	12	-	10	Ottawa	1,117.8
25,622.9		83.3	SUB-TOTAL		25,748.7
30,765.9		100.0	TOTAL		30,765.9
					100.0

SOURCE: Ministry of State for Science & Technology, Federal Scientific Resources 1973-75, Natural and Human Sciences

COMPARISON OF CANADA COUNCIL FUNDING FOR RESEARCH TO "TOP 10" CANADIAN UNIVERSITIES, 1972 & 1974*

RANKING IN 1972			
RANK	UNIVERSITY	\$000's	COLUMN %
1	Toronto	500.0	14.3
2	Montreal	287.4	8.2
3	Laval	252.3	7.2
4	Alberta	229.3	6.6
5	Waterloo	211.3	6.0
6	British Columbia	195.3	5.6
7	York	157.0	4.5
8	McGill	153.4	4.4
9	Queen's	130.7	3.7
10	Western Ontario	122.6	3.5
SUB-TOTAL		2,241.7	64.1
TOTAL		3,499.4	100.0

1972 RANKING COMPARED TO 1974 RANKING						
RANK OF 1972's "TOP 10"			RANK OF 1974's "TOP 10"			
\$000's	RANK	COLUMN %	RANK	UNIVERSITY	\$000's	COLUMN %
516.4	2	11.1	1	Laval	710.2	15.1
363.3	3	6.7	2	Toronto	516.4	11.1
710.2	1	15.2	3	Montreal	363.3	6.7
181.9	8	3.9	4	Quebec	287.2	6.1
159.0	10	3.4	5	British Columbia	257.0	5.5
257.0	5	5.5	6	McGill	215.2	4.6
181.8	9	3.9	7	Windsor	197.7	4.2
215.2	6	4.6	8	Alberta	181.9	3.9
72.8	22	-	9	York	181.8	3.9
132.4	13	-	10	Waterloo	159.9	3.4
2,790.9		59.4		SUB-TOTAL	3,070.6	65.3
4,699.6		100.0		TOTAL	4,699.6	100.0

* Includes all research grants to universities (excludes private schools) but does not include fellowships.

SOURCE: Ministry of State for Science & Technology, Federal Scientific Resources 1973-75, Natural and Human Sciences.

Appendix IV, 13

FEDERAL RESEARCH GRANTS TO QUEBEC UNIVERSITIES . DISTRIBUTION

BY SECTOR 1) 1972-1973

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Sectors	Grants allocated (\$) to			Percentage , by sector, of total grants allocated to			Grants to Quebec Francophone and Anglophone Institutions compared to total Quebec Institutions		Francophone Institutions Anglophone Institutions
	Francophone	Anglophone	Total	Institutions		All Institutions	Francophone	Anglophone	
				Franco.	Anglo.				
National Research Council	6,608,190	3,682,541	10,290,731	42.9	36.1	40.2	64.2	35.8	1.79
Health Sector 2)	6,073,111	5,259,208	11,332,319	39.5	51.6	44.3	53.6	46.4	1.16
Economic and Administrative Sectors 3)	1,371,651	636,140	2,007,791	8.9	6.2	7.8	68.3	31.7	2.16
Canada Council	1,033,441	257,239	1,290,680	6.7	2.5	5.1	80.1	19.9	4.02
Defence Research Board	296,200	364,100	660,300	1.9	3.6	2.6	44.8	55.2	.81
TOTAL	15,382,593	10,199,228	25,581,821	100.00	100.00	100.00	60.1	39.9	1.50

1) From the Directory of Federally-Supported Research in the Universities - 1972-73. Canadian Institute for Scientific and Technical Information, National Research Council, 1973.

2) Includes grants from Medical Research Council and Health and Welfare Canada .

3) All other Departments and Agencies reported in the Directory .

Appendix IV, 14

FEDERAL RESEARCH GRANTS TO QUEBEC UNIVERSITIES (1) *
1972-73

DISTRIBUTION BY INSTITUTION AND BY FIELD

	PURE AND APPLIED SCIENCES	HEALTH SCIENCES	HUMAN SCIENCES	TOTAL
FRANCOPHONE UNIVERSITIES				
- Laval	3,345,761(13.1)	782,342(3.1)	594,064(2.3)	4,722,167(18.5)
- Montreal and Polytechnique	3,193,932(12.5)	3,469,425(13.5)	575,709(2.3)	7,239,066(28.3)
- Sherbrooke	1,155,305(4.5)	921,099(3.6)	84,193(0.3)	2,160,597(8.4)
- Quebec University	837,195(3.3)	111,980(0.4)	271,888(1.1)	1,221,063(4.8)
- Royal Military College	39,700(0.2)	-- (0.0)	-- (0.0)	39,700(0.2)
SUB - TOTAL	8,571,893(33.5)	5,284,846(20.7)	1,525,854(6.0)	15,382,593(60.1)
ANGLOPHONE UNIVERSITIES				
- McGill (and McDonald College)	4,131,886(16.2)	5,032,834(19.7)	612,160(2.4)	9,776,880(38.2)
- Sir George Williams	300,044(1.2)	-- (0.0)	83,734(0.3)	383,778(1.5)
- Bishop's and Loyola	19,600(0.1)	-- (0.0)	18,970(0.1)	38,570(0.2)
SUB - TOTAL	4,451,530(17.3)	5,032,834(19.7)	714,864(2.8)	10,199,228(39.9)
TOTAL	13,023,423(50.9)	10,317,680(40.3)	2,240,718(8.8)	25,581,821(100.0)

(1) From the Directory of Federally-Supported Research in the Universities - 1972-73. Canadian Institute for Scientific and Technical Information, National Research Council, 1973.

* Figures in brackets are percentages.

University research grants allocated to each province
by each federal agency (1)

CANADA COUNCIL					
1972 / 1973		1973 / 1974		1974 / 1975	
Total (Canada) 4,213,182		4,708,273		5,198,029	
Ontario	1,820,667 (43.2 %)	Quebec	1,768,620 (37.6 %)	Ontario	1,973,407 (38.0 %)
Quebec	1,290,680 (30.6 %)	Ontario	1,724,468 (36.6 %)	Quebec	1,745,879 (33.6 %)
British Columbia	415,494 (9.9 %)	British Columbia	424,818 (9.0 %)	B. Columbia	600,692 (11.6 %)
Alberta	245,780 (5.8 %)	Alberta	282,452 (6.0 %)	Alberta	288,816 (5.6 %)
Nova Scotia	123,042 (2.9 %)	Nova Scotia	119,463 (2.5 %)	NFD	159,432 (3.1 %)
Manitoba	101,835 (2.4 %)	Saskatchewan	117,717 (2.5 %)	Manitoba	153,064 (2.9 %)
NFD	82,732 (2.0 %)	New Brunswick	108,483 (2.3 %)	New Brunswick	128,653 (2.5 %)
Saskatchewan	77,104 (1.8 %)	Manitoba	83,229 (1.8 %)	Nova Scotia	97,314 (1.9 %)
New Brunswick	52,608 (1.2 %)	NFD	77,527 (1.6 %)	Saskatchewan	45,610 (0.9 %)
P.E.I.	3,240 (0.1 %)	P.E.I.	1,496 (0.0 %)	P.E.I.	5,162 (0.1 %)

(1) This table and the next five have been prepared by Louis-Paul Dugal from the
Directory of Federally-Supported Research in the Universities.

University research grants allocated to each
province by each federal agency

MEDICAL RESEARCH COUNCIL					
1972 / 1973		1973 / 1974		1974 / 1975	
Total (Canada)	26,258,371		26,308,882		30,038,197
Ontario	9,819,571 (37.4 %)	Ontario	9,990,578 (38.0 %)	Ontario	11,016,831 (36.7 %)
Quebec	9,285,822 (35.4 %)	Quebec	9,015,702 (34.3 %)	Quebec	10,235,450 (34.1 %)
Alberta	1,976,245 (7.5 %)	Alberta	2,000,104 (7.6 %)	Alberta	2,785,105 (9.3 %)
B.Columbia	1,790,453 (6.8 %)	B.Columbia	1,800,948 (6.8 %)	Manitoba	2,049,492 (6.8 %)
Manitoba	1,761,672 (6.7 %)	Manitoba	1,722,792 (6.5 %)	B.Columbia	1,901,496 (6.3 %)
Saskatchewan	706,067 (2.7 %)	Saskatchewan	754,219 (2.9 %)	Nova Scotia	833,529 (2.8 %)
Nova Scotia	651,694 (2.5 %)	Nova Scotia	721,378 (2.7 %)	Saskatchewan	829,357 (2.8 %)
NFD	266,847 (1.0 %)	NFD	299,061 (1.1 %)	NFD	386,937 (1.3 %)

Appendix IV, 17

University research grants allocated to each
province by each federal agency

NATIONAL RESEARCH COUNCIL					
1972 / 1973		1973 / 1974		1974 / 1975	
Total (Canada)	52,299,162		51,990,860		53,593,490
Ontario	23,306,178 (44.6 %)	Ontario	22,394,995 (43.1 %)	Ontario	23,039,194 (43.0 %)
Quebec	10,290,731 (19.7 %)	Quebec	10,398,606 (20.0 %)	Quebec	10,631,981 (19.9 %)
British Columbia	5,836,432 (11.2 %)	British Columbia	6,034,762 (11.6 %)	British Columbia	6,293,486 (11.8 %)
Alberta	5,440,813 (10.4 %)	Alberta	5,329,939 (10.3 %)	Alberta	5,780,260 (10.8 %)
Manitoba	2,006,391 (3.9 %)	Manitoba	2,141,930 (4.2 %)	Manitoba	2,177,712 (4.1 %)
Saskatchewan	1,888,285 (3.7 %)	Saskatchewan	1,757,711 (3.4 %)	Nova Scotia	1,881,481 (3.6 %)
Nova Scotia	1,531,926 (3.0 %)	Nova Scotia	1,648,048 (3.2 %)	Saskatchewan	1,582,360 (3.0 %)
New Brunswick	1,033,417 (2.0 %)	New Brunswick	1,142,317 (2.2 %)	New Brunswick	1,158,181 (2.2 %)
NFD	934,339 (1.8 %)	NFD	1,094,352 (2.1 %)	NFD	1,010,785 (1.9 %)
P.E.I.	30,650 (0.1 %)	P.E.I.	48,200 (0.1 %)	P.E.I.	38,050 (0.1 %)

Research grants allocated to Canadian Universities
by each federal agency

Amount and percentages obtained by each Quebec
University, 1972/73, 1973/74 and 1974/75

	CANADA COUNCIL		
	1972/1973	1973/1974	1974/1975
Total (Canada)	4213182	4708273	5198029
Laval	489173 (11.6%)	751476 (16.0%)	454418 (8.7%)
Montreal	334435 (7.9%)	341849 (7.3%)	583169 (11.2%)
Sherbrooke	41493 (1.0%)	83184 (1.8%)	74571 (1.4%)
Université du Québec	168340 (4.0%)	313077 (6.6%)	339867 (6.5%)
Total (Francophone Univ.)	1033441 (24.5%)	1489586 (31.6%)	1452025 (27.9%)
Bishop's	1800 (0.0%)	2137 (0.0%)	11357 (0.2%)
Concordia	69463 (1.6%)	59542 (1.3%)	90086 (1.7%)
McGill	185976 (4.4%)	217355 (4.6%)	192411 (3.7%)
Total (Anglophone Univ.)	257239 (6.1%)	279034 (5.9%)	293854 (5.7%)
Total (Quebec)	1290680 (30.6%)	1768620 (37.5%)	1745879 (33.6%)

NOTA

1. Quebec Universities receive each year a significant proportion of the Canada Council grants .
2. In Quebec, Francophone Universities receive much more (over than 80%) from Canada Council than Anglophone Universities.
3. In 1972-73 and 1973-74, Laval University is far ahead among all Universities in this field; in 1974-75, however, it comes behind Montreal University which received almost \$ 250,000 more than the previous year, whereas Laval is being granted \$ 300,000 less than in 1973-74 .

Research grants allocated to Canadian Universities
by each federal agency

Amounts and percentages obtained by each Quebec
University, 1972-73, 1973-74 and 1974-75

	MEDICAL RESEARCH COUNCIL OF CANADA		
	1972/1973	1973/1974	1974/1975
Total (Canada)	26258371	26303882	30038197
Laval	747897 (2.9%)	929321 (3.5%)	1003924 (3.4%)
Montreal	2828872 (10.8%)	2578362 (9.8%)	3186900 (10.6%)
Sherbrooke	833921 (3.2%)	844475 (3.2%)	818344 (2.7%)
Université du Québec	98180 (0.4%)	35160 (0.1%)	78689 (0.3%)
Total (Francophone Univ.)	4508870 (17.2%)	4387318 (16.7%)	5087857 (16.9%)
McGill	4769652 (18.2%)	4617384 (17.6%)	5122593 (17.1%)
Concordia	7300 (0.0%)	11000 (0.0%)	25000 (0.1%)
Total (Anglophone Univ.)	4776652 (18.2%)	4628384 (17.6%)	5147593 (17.1%)
Total (Quebec)	9285822 (35.4%)	9015702 (34.3%)	10235450 (34.1%)

NOTA

1. Obviously McGill is receiving each year the main proportion (more than half of the total grants to Quebec Universities).
2. Montreal University obtains much more than Laval, Sherbrooke and Université du Québec taken individually or altogether.
3. Compared to the other Canadian Universities, the percentages obtained by McGill and Montreal are quite significant (very active sector in both universities).
4. Due to McGill, Anglophone Universities are slightly ahead of Francophone ones .
5. Total Quebec Universities(namely Faculties of medicine) receive an important part (> 34 %) from M.R.C.C.

Research grants allocated to Canadian Universities
by each federal agency

Amounts and percentages obtained by each Quebec
University, 1972-73, 1973-74 and 1974-75

	NATIONAL RESEARCH COUNCIL		
	1972/1973	1973/1974	1974/1975
Total (Canada)	52299162	51990860	53593490
Laval	2291300 (4.4%)	2323028 (4.5%)	1906036 (3.6%)
Montreal	2091233 (4.0%)	1919322 (3.7%)	1731890 (3.2%)
Polytechnique	729294 (1.4%)	1015790 (2.0%)	1141056 (2.1%)
Sherbrooke	701108 (1.3%)	752603 (1.5%)	816099 (1.5%)
Université du Québec	795255 (1.5%)	823976 (1.6%)	1225665 (2.3%)
Total (Francophone Univ.)	6608190 (12.6%)	6834719 (13.1%)	6820746 (12.7%)
Bishop's	10915 (0.0%)	16200 (0.0%)	21960 (0.0%)
Concordia	321170 (0.6%)	502508 (1.0%)	606174 (1.1%)
Macdonald	353199 (0.7%)	304657 (0.6%)	300050 (0.6%)
McGill	2997257 (5.7%)	2740522 (5.3%)	2883051 (5.4%)
Total (Anglophone Univ.)	3682541 (7.0%)	3563887 (6.9%)	3811235 (7.1%)
Total (Quebec)	10290731 (19.7%)	10398606 (20.0%)	10631981 (19.8%)

NOTA

1. Only Montreal University (+ Polytechnique) and McGill University can be considered as having an active sector in this field, if the indicator $\geq 5\%$ of total Canadian Universities is taken as a basis .
2. The constant increases of the Université du Québec (some \$400,000 more in 1974-75 than in 1973-74) and of Sherbrooke University among Francophone Universities and of Concordia University among Anglophone ones are noticeable .
3. The increases experienced by Sherbrooke and the Université du Québec are accompanied in 1974-75 by sharp decreases in Laval and Montreal (excluding Polytechnique in this case) .
4. The total of the N.R.C. grants to all Quebec Universities is relatively low ($\leq 20\%$), but it favors Francophone Universities.

Appendix IV, 21

INVENTORY OF FUNDED AND SPONSORED RESEARCH IN QUEBEC UNIVERSITIES. NUMBER OF PROJECTS ,
AMOUNTS GRANTED AND PERCENTAGE DISTRIBUTION BY UNIVERSITY, 1972-73 AND 1973-74

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University, School, etc..	Number of projects			Amounts granted			
	1972-1973	o/o	1973-1974	o/o	1972-1973	1973-1974	o/o
Laval	620	15,3	673	15,1	10 760 447,52	10 834 491,17	21,3
Montreal	642	15,9	658	14,8	9 744 840,00	11 721 030,00	23,0
Hautes études commerciales	5	0,1	6	0,1	71 763,00	88 814,00	0,1
Polytechnique	256	6,3	276	6,2	1 520 389,00	2 028 788,00	3,9
Sherbrooke	328	8,1	372	8,3	3 789 931,99	4 166 045,83	8,1
Univ. du Québec Headquarters	-	-	6	0,1	-	46 350,00	--
Univ. du Québec at Chicoutimi	67	1,6	58	1,3	671 501,00	603 195,00	1,1
Univ. du Québec at Montreal	91	2,2	146	3,2	914 312,00	1 264 548,60	2,4
Univ. du Québec at Trois-Rivières	80	1,9	96	2,1	569 619,00	592 829,00	1,1
Univ. du Québec at Rimouski	42	1	47	1	252 095,00	225 284,00	0,4
Univ. du Québec in the North West	3	--	-	-	34 960,00	-	--
I.N.R.S.	49	1,2	102	2,3	1 043 710,00	1 601 181,00	3,1
E.N.A.P.	14	0,3	11	0,2	87 734,00	77 096,00	0,1
I.M.H.M. (*)	44	1	32	0,7	925 461,00	643 864,25	4,2
Université du Québec (Total)	390	9,6	498	11,2	4 499 392,00	5 054 337,80	9,9
Bishop's	19	0,4	9	0,2	27 256,00	34 081,00	--
McGill	1 564	38,7	1 725	38,9	14 669 277,00	15 771 497,00	31,0
Sir George Williams	185	4,5	179	4	919 021,00	1 033 806,00	2,0
Loyola	23	0,5	35	0,7	61 150,00	83 500,00	0,1
Total	4 032	100	4 431	100	46 063 467,51	50 816 390,90	100,0

(*) Changed in 1975-76 to Armand Frappier Institute (A.F.I.) - SOURCE :
(Government of Québec, Department of Education, Higher Education Branch) (unpublished).



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